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ABSTRACT

This paper reviews research literature in the following areas associated with second language reading: (1) the level of language development in the native and target languages, (2) the teaching method selected, (3) the teaching materials selected, (4) the time and place of initial literacy in the home-language (L1), (5) the transition from home-language literacy to English reading (L2), (6) the potential transfer of reading skills from one language to another, (7) the cultural compatibility of methods and materials, and (8) the teacher. Major topics addressed include research in reading in bilingual education, dimensions of reading, research on ex-post facto variables (SES, sex, culture, learning style), research on reading readiness, the language for initial literacy, methods for teaching reading to bilingual learners, and teaching reading to advanced students. Recommendations for approaches to teaching reading are explored based on whether the goal of the program is acculturation into the dominant linguistic culture, functional bilingualism and biliteracy, or the preservation of the first language and ethnic identification. (JK)

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A REVIEW OF THE RESEARCH ON THE TEACHING OF READING IN BILINGUAL EDUCATION

Philip D. Smith, Jr. Ph.D.
West Chester State College of Pennsylvania
Consultant

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READING IN BILINGUAL EDUCATION

A REVIEW OF THE RESEARCH

Philip D. Smith, Jr.
The University of Delaware

I. INTRODUCTION

In the United States no area of the curriculum is as much studied, as much discussed nor consumes as much of the educational effort as does the teaching of reading. And--in an industrialized technically oriented society--no skill is as basic to social and economic well being. For the person entering the English language community, either as a child from a minority language home or as a vocationally oriented adult, learning to read English is a formidable task. In the context of a second language; however, the teaching of the reading skill has not received proportional attention.

The emphasis on second language learning during the most documented years of the past two decades has been on the teaching and acquisition of the audiolingual skills. Even with a shift to a more balanced skills approach, reading has continued to be viewed as a secondary skill which can only follow the acquisition of proficiency in the spoken language. Even in the literature which addresses reading, reading itself often plays a secondary role to the oral skills.

During the same period bilingual education in the United States has come from almost non-existence through a phase of rapid expansion stimulated by an increasing awareness and funding from migrant, remedial and exemplary monies. By the mid-1970's bilingual education had again begun to retrogress from a truly bilingual/bicultural thrust back toward remedial acculturation education for linguistically different children. Throughout, there has been little cohesion or consensus on programs or instruction. Still, in all of the hundreds of diverse bilingual programs, reading instruction has played a major role. It seems worthwhile as the 1980's open and bilingual education enters a new, more mature, phase to review the literature and determine exactly what is known--and what is not known--about the teaching/learning of reading in the bilingual setting.

What information on the reading process is available to the decision maker in bilingual edcation? What practices have a real solid research base? What areas still need to be explored? How easy is it to find out? These questions prompted a comprehensive review of the literature on reading in bilingual education. The answers appear to be disquieting.

As background for the review, the author studied the current state-of-the-art in general reading theory. A specific search of the literature in reading in bilingual programs included several computer searches of ERIC, a review of dissertations, both American and British, and a review of all available material published since 1960. Some 1,000 citations were developed of which approximately 600 were reviewed and annotated. Of these only the directly pertinent are included in the comprehensive list of References which accompanies this monograph.

The literature on the reading process in bilinguals and in bilingual education programs is largely a collection of teacher testimonials and anecdotes, the reiteration of "everyone knows" assumptions and listings of materials and activities. There is only a small body of actual research and much of that has little validity, either internal or external. The whole area of the teaching of reading in bilingual programs needs a great deal of more careful study.

Garcia (1977) in a major paper on reading development and bilinguals, divides the literature of reading in Hispanic bilingual education into four phases: (1) pre-1935 where bilingualism was viewed as a type of cultural deprivation; (2) 1935-1955 when bilingualism was viewed as a type of linguistic deficiency; (3) 1955-68, an era when bilingualism was perceived and studied as a linguistic phenomenom; and (4) post-1968 as an era of transition and increasing public and educational awareness. Garcia pointed out that most of the research on reading for Hispanic children has been done on contrasting the surface structures of the languages, concentrating on phonetic and lexical differences. Relatively few studies have addressed the deep structure levels of syntactical and semantic processing and conceptualization. The situation has not changed in the several years since Garcia surveyed the field.

Bilingual or second language reading is certainly a worthwhile topic for study, not only since it affects hundreds of thousands of non-English dominant children's education but it may also have implications for reading instruction in the first language. Downing (1974) in an article entitled "Some curious paradoxes in reading research" pointed out that learning to read in two languages is sometimes easier than learning to read only one. His belief that "the way children think and learn should be the starting point for all teaching work" sounds like another cliche until one realizes that very little is known about how bilinguals think and less about how they learn.

Garcia's (1977) phases of bilingual education are not as clear cut as it would seem. Varieties of Spanish spoken in the United States are still not considered worthy of individual merit (Gaarder, 1972) and bilingualism is still viewed as a deficit. This is illustrated by the continuing series of papers and programs which view the problem as a language disability (Strong, 1973) and the continuing emphasis on remediation and mainstreaming evident in school programs for non-English dominant children.

Thonis (1977) presented reading specialists with eight considerations that should be provided for in the teaching of reading to Spanish dominant children. Recast to the broader context of all second language reading, these are still useful considerations:

(1) The level of language development in each language,
(2) The method selected,
(3) The materials,
(4) The time and place for initial literacy in the home-language (L1),
(5) The transition from home-language literacy to English reading (L2),
(6) The potential transfer of reading skills from one language to another,
(7) The cultural compatibility of methods and materials, and
(8) The teacher.

This monograph will attempt to review the research literature in these major categories and some additional supporting areas with the exception of (8) teacher factors.

II. RESEARCH IN READING IN BILINGUAL EDUCATION

The quality of research in reading has been addressed in a recent publication edited by Farr, Weintraub and Tone (1976). Their criticisms are especially applicable to the area of teaching reading in second language and bilingual education programs. Farr and Weintraub (1976) state that research in reading is generally of poor quality and that there is a need for longitudinal (long term) studies of reading progress. This last is obviously missing in the area of second language reading where most work reported is done over a period ranging from a few weeks to a year while only one or two studies (notable Canadian) measure student achievement over a period of years.

The most common pattern in reading research is for a person to publish only one study (Farr _et_. _al_.). Subsequent publications tend to be rereporting the same study or an extension of it for a variety of audiences. This pattern holds for research in reading in bilingual programs where multiple bibliographic entries for one author often lead back to a single research study (_c. f_. Herbert). A number of research articles tend to be either the doctoral study or an extension of it rewritten for publication. Goodman (1976) has pointed out that great influential leaps are made from little research. A classic example in the research on the teaching of reading in bilingual education might be the work of Nancy Modiano. Her work comparing initial literacy in the home language versus the national language began as a doctoral study (1966) and was expanded and reported within a year or two following (1969). Subsequent publications (1976) refer back to this single but important piece of research. Modiano has been subsequently cited as the definitive study on this very important question and is used to support a variety of other papers. Yet the fact remains that the profession has been given a single important study with considerable contextual and methodological restrictions. Modiano's work is certainly important and has been discussed elsewhere (q. v.). The purpose of citing Modiano here is to illustrate the process typical in the research on reading--a single study widely reported and cited which has served as the base for considerable curriculum reform.

Robinson (1976) points out that the vast number of reading studies--in excess if 8,000 prior to 1974--have no widely accepted model nor any truly "hard" results. Farr and Weintraub (1976) describe reading research as generally of poor quality and call for more longitudinal studies of reading effectiveness as do Blake and Allen (1976). Experimental and quasi-experimental research are generlly the most "believable" models but suffer from sampling problems (Wardop, 1976). Goodman (1976) believes that the statistical research model is too narrow and suggests that researchers concentrate on in-depth studies of fewer individuals to gain greater insights into the actual reading process. Malmquist (1978) reports that this is occurring in Sweden.

The questions facing the research consumer often seem contradictory and confusing. The problems associated with valid research seem to become intensified when dealing with the non-English-speaking child in the American context. One solution may be to look more to research abroad (Feitleson, 1978) where validity is easier to control. Another may be to examine factors that influence the validity of research in order to read current research with greater expertise and to develop future designs which more highly control. Among factors which affect validity are the problems of defining the research hypotheses as well as problems of design, population and instrumentation when studying minority children.

The quasi-experimental approach is the most widely respected model in educational research. This approach requires the establishment of meaningful but measurable hypotheses. In bilingual reading the development of cogent hypotheses is handicapped by the lack of operational definitions of expected levels of language ability and by the shifting nature of the theoretical approaches to language, reading and bilingualism. As Wardhaugh (1976) has pointed out, five years is the half life of an idea in linguistics. Compare that time span with

Bligh's (1976) assertion that in reading it takes three to five years to develop and norm a test. By the time an idea has reached the practioner and hypotheses are developed and tested, the basic premise maybe obsolescent if not obsolete.

The biggest practical problem facing the researcher in bilingual education is the availability of adequate research populations. Most research on reading is done on "grab" groups--the students available at the time (Wardrop, 1976). In bilingual education the number of students available is often quite small, extremely mobile and most often of low socio-economic status. Even within the same language there are vast differences in culture, geographic and socio-economic status. The sample size is usually small, requiring sophisticated statistical techniques. Much research in the teaching of reading in bilingual education simply is not generalizable from a sampling standpoint alone.

This sampling problem is especially critical in the bilingual/second language area where the number of students is a relatively small proportion of the total school population and the ages and abilities of the students are often widely varied. In many cases the research hypothesis may even have been established ex-post facto; not "I have a hypothesis--where can I find a population?", but "I have a population--what can I do with it?".

There also does not seem to be a recognized and/or widely accepted taxonomy of either English-as-a-second language or Spanish-as-a-first language skills toward the mastery of which educators can develop programs. Taxonomies of English skills have been developed by a multitude of school districts based sometimes upon "survival" and "school" language with modicum of linguistics and often an adoption and/or adaptation of some other district's list. Unique is SOBER-Español, a taxonomy of behavioral objectives being developed for Spanish reading in California (Cornejo, 1974). This project is intended to provide a comprehensive system to evaluate reading in Spanish, K-12.

Blake and Allen (1976) remind potential researchers that the major variables of longitudinal studies are maturation and duration. In bilingual education, where the home language is most often minority language in daily contact with a majority prestige language, research cannot discount extra-mural influences on language acquisition and reading achievement. Most research reported in the United States must be read with extra-class language influence (T. V., radio, movies, school, peers) in mind.

Critique of existing research:

The best that can be said of research in the teaching of reading in bilingual programs is that it is rare. The preliminary review of the literature suggests that there is a considerable mass of reporting of which only a small part purports to be research. Of that fraction only a similar smaller fraction can be classified as "research" in the experimental or quasi-experimental sense.

The bulk of the literature must be classified otherwise--factual reports of hours, texts, tests and remediation; testimonials of teachers who have been able to have their ideas put into print; philosophical or theoretical raison d'etre for various positions on reading, most often to present a case for home-language instruction and literacy. Careful, objective and cogent research is rare.

There does exist an extensive research literature in first language literacy. The tendency has been to simply move first language techniques, especially those associated with remediation, bodily into bilingual education programs with little thought to using distinctive techniques perhaps better suited to the learning processes of linguistically different children. One notable exception to this has been the work of Herbert (1972) in using Mexican trained teachers to teach reading to Hispanic Americans.

The best controlled research on reading acquisition in a second language is that done by doctoral candidates. Here problems are more often cogent, carefully delimited and studies are more experimentally oriented.

Areas of Needed Research:

Even a cursory examination of the literature reveals that good solid generalizable and replicable research is needed in all facets of reading in bilingual programs. Research in reading for monolingual English speakers is itself not usually well done (Farr et. al., 1976). Neither is research into bilingualism or the learning strategies used by bilinguals.

Unfortunately, "bilingual education" in the United States is almost universally regarded, either overtly or covertly, as remedial education. Therefore, both the internal and external validity are different to control.

Research in the area of reading for bilingual programs needs to be done in three levels. Careful and quality studies need to be done on (1) the reading process of monolinguals, (2) the replication of these same studies for bilingual children and (3) the independent study of nypotheses especially devised for the non-English speaker.

Practical questions which need to answered include:

--Are reading strategies different for the bilingual?

--How much oral facility should precede reading instruction?

--Piagentian psychology and recent studies of bilingual dominance lend credance to delaying reading in L2 until students have moved beyond the stage of concrete operations in L1. Is this a more effective approach?

--Which basic approach to English reading will prove most effective for the non-English dominant student?

--Should reading materials/approaches be different for learners from different language backgrounds? (i.e. stress on indefinite articles for speakers of Japanese/Korean; process oriented texts for speakers of Amerind languages).

--Is there a transfer of reading skills from one language to another?

--The single biggest issue in bilingual education is the case being made for critical instruction and literacy in the home-language of the student both for cognitive and affective reasons. Is initial literacy in the first language truly worthwhile?

Goodman (1976), one of the leading reading theoreticians of the past decade, argues strongly against the use of the experimental (i.e., statistical) model in reading research. Goodman believes that statistical models are too restrictive and cannot account for long-term results. Many aspects of reading are not assessable in a quantifable sense. He is concerned that ideas tested in a narrow setting are not generalizable to the real world. Goodman believes that much of the research in reading is based upon doctoral studies which may be influenced by the biases of the faculty advisor and the population available to the researcher. Great leaps, he writes, are made from little research. Certainly Goodman's criticisms are very true of much of the research done on the teaching of reading in bilingual programs.

Specifically, the research in bilingual reading has (1) no agreed on long term objectives, (2) is most often poorly done from a methodological and sampling standpoint;

(3) is reported in a piecemeal and widely scattered fashion and (4) is either generally ignored or eagerly accepted but not read, replicated or applied with caution.

It would seem appropriate to develop a specific guide to the establishment and conduct of research in reading bilingual education within the American setting and on a global scale. The socio-economic and political influences on American bilingual education may well require that meaningful experimental research be done elsewhere. Established results could then be tested in American classrooms. Researchers in bilingual reading need to be more professional and more rigorous. Professional literature--including the ERIC system should also be either more selective or preface accepted documents with brief caveats relating to the context of the research and its basic design. Too often is research accepted simply because it is "in print" ("in ERIC"). We cannot yet expect the educational practioner to be a skilled reader of educational research nor free from immediate pressures to act without adequate information.

As illustrations, it is worthwhile to examine some studies contained in the professional literature and discuss some problems associated with the acceptance of their results.

An interesting achievement pattern was revealed in an experiment on the development of pre-reading skills at the kindergarten level (Stauchfield, 1971). On both pre- and post- experimental measures, Mexican-American children, as might be expected, scored significantly less than monolingual English speakers. However, the Mexican-Americans scored significantly higher than native English-speaking black children. Females in all groups scored higher than males. The reasons for the higher scoring by the Hispanic students is not discussed in detail but may be due to a misequation of Mexican-Americans with non-English speakers, i.e. these children may have either been close to the English speakers either in language skills or in the assimilation of the middle-class social and school behaviors that are used to measure achievement at the kindergarten level. In any case, data such as this cannot be interpreted to illustrate poor achievement based on English competency language alone. Even the black child with a non-standard dialect of English could be assumed to have more English skill than a Spanish-dominant child. Therefore, simplistic categorization as a "Mexican-American", "Hispanic" or "Spanish-surnamed" may not reveal true language dominance.

A study by Ehrlich (1971) attempted to demonstrate a scientific basis for primary literacy in the first-language. A comparison was made between two second grade classic where a control groups had instruction only through English, the experimental group (N-21 had instruction in both English (50%) and Spanish (50%). No pre-test was given and both groups had received English only instruction in kindergarten and first grade. No measures were made of teacher variables. Using both English and Spanish post-test measures (Inter-American Reading Tests) at the end of the second grade, Ehrich stated that the findings supported the conclusions that the mother tongue should be introduced as the medium of instruction when the child first enters school and that bilingual teaching would help to alleviate the problem of low reading achievement for the non-English speaking child. A more conservative research might well challenge such conclusions based upon this study as being rather more than the methodology and the validity warrant.

Similiar sweeping conclusions from rather nebulous data were advanced by Reich (1975) in an unpublished comparison of Mexican-American (N-14) in "regular" (English only) instruction and these in a bilingual instructional program (N-15). The same teachers taught and graded both groups. The data presented by Reich is a comparison of grades and grade improvement by the use of illustrative charts (33 charts). Reich concludes that "Whether using raw grades (Charts 1-16) or deviations from the mean (Charts 18-33), it is clear that the grades of pupils in the bilingual group improved to a greater degree than the grade of pupils in the regular group in every subject area--it seems obvious that the greater use of Spanish in the bilingual groups avoided the language problem which generally interferes with the scholastic achievement of Mexican-American pupils" (pp. 29-30). With such a small sample of students (29) chosen to represent a population of 39,000--and using an "eyeball" comparison of teacher assigned grades instead of a statistical analysis of objective test scores--this sweeping generalization seems based on a rather scant foundation.

Another study which developed important but more meaningful conclusions from a small amount of non-significant data is that of Ricardo Chapa (1976). Chapa studied the English reading achievement of Mexican-American children who had been for three years (K-2) in a bilingual program. The comparison group was a selected group of Mexican-American students who had never had bilingual instruction. Secondary objectives of the study were to compare Spanish reading skills and student self-concept. Not surprising was that children taught to read Spanish did so significantly better than students who had never received such instruction. More surprising was that there was no significant difference in self-concept between the bilingually educated and control groups. The major conclusion was that there was no significant difference in English reading achievement--indicating that the bilingual instruction added Spanish language skills with no less in English reading achievement.

It is indeed unfortunate that studies of the type reported by Chapa are ex post facto designs done with small non-random samples and no pre-testing. Conclusions of such studies are cited and re-cited, leading to unsuported generalizations upon which whole programs are based.

In recent years a considerable portion of educational programs for migrant children have provided specialized instruction for the non-English speaking child (P. Smith, 1969). These programs have recently been directed to a greater concentration on basic skills. Carling and his associates studied 144 Spanish-speaking children ages seven to twelve from six Colorado migrant programs. They found that the students averaged three grade levels behind in English reading skills. From his data Carling drew the conclusion that special summer programs for migrants with their heavy emphasis on reading are not achieving the results expected.

Holleman (1976) reports a statistically elaborate comparison of "traditional" monolingually instructed (control) and bilingually instructed students in grades three, five and eight of an unidentified Texas community. All students, both experimental and control were Spanish-dominant. In this carefully prepared analysis the only reporting weakness noted was the lack of description of the method of selecting the experimental and control populations. Ninety-three percent of the students in the district were Spanish-speaking. Students selected represented ten of the twenty-seven ~~schools~~ in the district. Both English and Spanish language skills were tested. The instruments used proved valid.

Holleman's results indicated that there was no signicant advantage for bilingual instruction over monolingual English instruction for Spanish-dominant children either in terms of English reading achievement or Spanish reading achievement. Only in the Fifth Grade sample were some significant differences which were more attributable to acculturation than to methodology (p. 27). Holleman provides one of the most telling and direct statements found in the literature concerning the effectiveness of "bilingual" education. Referring to his data, he wrote:

> At best the results give cause for reviewing the treatment (bilingual) reading program, for if control (monolingual English) students could score just as well or higher than their counterpart treatment students, especially in Spanish and English comprehension, the additional cost of providing such a non-traditional reading program would seem dubious. A cost-benefit analysis would barely support treatment in this context... (p. 22).

Taken alone and without a broader perspective of Holleman's study in which the city is anonymous, instruction undescribed and no data given on sampling, the indictment has tremendous implications. Placed in the proper perspective and with the validity questionable, Holleman's statement may be challenged. The superficial reader, the biased ethnocentric, the financially strapped superintendent will find in Holleman support for their premises which are really unsupportable. One cannot agree with Holleman without more information.

III. DIMENSIONS OF READING

The process of reading involves four simultaneously operating and processing levels: perceptual, psycholinguistic, cognitive and affective. The reader must be able to physically (1) perceive the written symbol, (2) must be able to decode the symbol into linguistic sense, (3) refer the linguistic units to his/her cognitive base for meaning or "meaning inferencing" and (4) integrate and interpret this knowledge with his/her affective associations. The result is transition from written symbol to psychological meaning. For the purposes of this monograph, reading without meaning is not reading.

. For the bilingual each of these four sub-processes seems to have both more dimensions and additional pedagogical implications. Important initial questions are raised: Are the perceptual development and processes the same for non-English speakers and English monolingual speakers? Are there socio-economic correlates to perceptual development which may be more apparent in American bilingual minority groups? How much knowledge of a second language is necessary before a reader can inference the meaning of new unknown material using his/her cognitive background? Do different non-English-speaking groups relate affectively the same or differently to identical written English selections? These are just a few of the many questions which arise for which there are yet no solid answers.

Information Processing Models of Reading

A new series of theoretical views of the reading process have emerged from the literature over the past fifteen years. These attempts to describe reading as a process rather than a series of discrete acts have a commonality (Williams, 1971) in that they all may be classified as information processing models. This now seems to be the most widely held basis for describing the reading process and is gaining research support not only in the study of first language reading but most especially from studies of reading in the learner's second language.

John Carroll in Language and Thought (1964) defined reading as the activity of reconstructing by the reader of an oral message graphically encoded by the writer. This reconstructed "oral" message is mentally internalized, not necessarily vocalized. This reconstruction then generates meaning in the same way that a comparable spoken message would be--by processing with the reader's already functioning linguistic skills.

The models advanced by Goodman (1966) and Ruddell (1967) are expansions of Carroll's simpler model. Goodman also posited the oral reconstruction prior to linguistic processing. However, he expands the decoding process into processing via three distinct systems: graphophonic, syntactic and semantic. He believes the reader uses these different systems simultaneously to reconstruct a parallel non-vocalized oral version of the written message. Goodman additionally posits a hypothesis testing stage where the reader is processing information and making decisions on meaning based upon a comparison of the agreement of the text with linguistic expectations established by the implicit knowledge of the language.

Ruddell's (1969) model is a more sophisticated version of Goodman's model which attempts to graphically illustrate the individual processing of both phonemes and morphographemes (letter patterns) are converted into non-vocalized morphophonemes (sound patterns) prior to processing at morphological and syntactical levels. Like Goodman, Ruddell shows reading as a cognitive process which gathers information and actively tests the reader's hypothesis about what he sees against what he expects.

These models describe the process of reading in the mature (successful) reader. Smith (1971) agrees with Goodman in a tripartite processing of graphic symbols: Letter identification, word identification and the comprehension of meaning. Smith says that word and meaning identification are often a combination of visual configuration and contextual cues.

Goodman's model apparently describes both the beginning and the mature reader. Goodman argues against a division of the reading process into component sub-skills and yet his model cannot be adequately scientifically supported unless sub-components are rigorously tested.

The learner who is beginning to read in his dominant language presumably has all the skills prerequisite to the task, including not only a rather complete command of the grammar and lexicon but also such skills as making comparisons, categorization, and rule-formulation through hypothesis testing. The learner beginning to read in a second language usually does not have these skills--at least not to the same degree.

Smith (1971) illustrates how the information processing skills of the beginning reader are more overburdened than those of the proficient reader. The beginner must concentrate on processing individual letters and words and thus cannot use the greater cues provided by syntax and context. The beginner must use mediated identification, a more conscious mapping of the graphemes onto the sound pattern which is then used to identify a word. This slows down the reading process even in the native language.

In the language which uses an alphabetic system there is a high degree of predictability between graphemes and phonemes even in a language with such poor spelling reputation as English (Venezky and Weir, 1966; Chomsky and Halle, 1968). However, it is believed that this is not useful in processing until and unless the reader has a high degree of command over both the phonology and lexicon of the language. A strong argument has been made for instruction which stresses conceptualization of abstract grammatical aspects of language rather than the letter-by-letter, word-by-word approach (Ryan and Semmel, 1969). The second language reader, therefore, seems doomed to use the strategies which are known to retard and inhibit the beginning native-speaking reader from achieving his/her proficiency potential.

In the sense that a person's home language, the mother's tongue (L1), is absolutely more a part of him than any other human characteristic, it seems almost inhuman to deny fundamental education through that medium. Sex, religion, political persuasion--these can be changed, the first language cannot be erased not even ever fully replaced by a second language (L2) despite decades of sublimation. As a human "right" as a medium of cultural heritage and expression, the mother tongue seems to have both a right to exist and a right to be considered important. To talk of not teaching a formative child through his dominant language almost smacks of nationalistic chauvanism at the expense of creating cognitively mediocre bilingual citizens. The problems of which language to use as a first language of instruction is, therefore, best argued as a philosophical and ethical basis than on a research base--for research is indeed lacking and even counter at this point (1979).

Yet the question is still most pertinent. Federally supported bilingual education programs in the United States were originally truly bilingual in that there was most often a deliberate requirement for a mixture of English and non-English speaking children. This requirement was eliminated in the mid-1970's and "bilingual" classes are now most often "transition" programs to facilitate placement of non-English speakers into the mainstream of the English language educational system. Where few American classrooms actually began literacy in L1 and L2 simultaneously (Shore, 1974). L1 literacy now holds a marked second place in many so called "bilingual" programs. The question of initial literacy in L1 or L2 is most often decided on social, political and economic bases rather than on linguistic, psychological or pedagogical. When this is done, L2 literacy usually prevails is L2 is the dominant and national language.

Language instruction as an instrument of national policy is a separate study with a considerable literature (cf. Parker, 1956, 1961). However, once the decision is made to admit and permit a segment of the population to maintain its first language (L1) in addition to the acquisition of the national language (L2), that language is a worthy medium of education. The question then should be addressed on a pedagogical rather than an economic-political plane.

A quarter century ago a definitive statement on the primacy of initial literacy in the vernacular was made by UNESCO (1953) with the expectation that this would become a world-wide policy. Based upon the then available research in Mexico reported by Barrera-Vasquez, (UNESCO, 1953) and in the Philippines (Orata, 1953), the UNESCO position was that it was axiomatic that the dominant language was the best medium for basic education. Over twenty years later Patricia Lee Engle (1975) wrote a superb article which delineated the arguments for and against initial literacy in the home language (L1). Her conclusion was that the research still did not support the supposition that first language literacy was paramount--the question was still one of intuition and affective education rather than a decision which specifically sprang from how children read a second language.

Processing in a Second Language

The psycholinguistic view of reading emphasizes that the reader uses contextual information more than visual information from written material. The contextual information used by a reader is of three types: syntactic, semantic and discourse (Cziko, 1978). Earlier approaches to reading had concentrated on the discrimination and perception of individual letter and words. This emphasis has been largely discounted in the improvement of reading.

The model which depicts reading as an information processing system is gaining both increasing philosophical and research support (F. Smith, 1971). Not all research supports the psycholinguistic comdel. Sinder, Samuels and Spiroff (1974) reported that in their study involving one hundred and sixty-four children that those who learned words in isolation responded significantly better than students who learned words in sentences. Samuels infers that context detracts from learning since it reduces the learner's need to focus on the graphic features of the word itself.

However, evidence is accumulating that mature readers do scan and extract meaning through contextual clues. Cunningham (1975) reports that readers guess at new words by comparing them to known words and word parts (bound morphemes). A study by Ehri (1976) on the effects of form class and defining contexts on word recognition strengths the contextual processing hypothesis. Contrary to the supposition that sentence simplicity would contribute to ease of reading, a study by Pearson (1974) on third and fourth grade monolingual children seems to indicate that sentence complexity is an aid to comprehension and recall rather than a hinderance. Isakson and Mitter (1976) found that better readers ("good comprehenders") are significantly more sensitive to and aware of textual syntactic and semantic cues.

Krulee and Schwartz (1975) studied scanning processes and sentence recognition in readers. They found that the amount of errors in reading increase as eye exposure width decreases. They hypothesize that mature readers store information in a mental register and then scan the register, segmenting sentences into phrases, phrases into words, and words into smaller units. A visual model of this processing is reproduced in Holley and King (1979). They believe that limiting the text exposure interferes with this information processing and causes reader error. Herein seems to be the major distinction between first language (L1) and secong language (L2) reading. The reader in the second language is so limited to the initial decoding process that he/she cannot avail themselves of the inherent language processing competence of the native speaker.

The implications of the information processing model of reading in second language reading was raised by Woodsworth as early as 1972. Oller and Tullius (1972) compared the visual mechanical aspects of reading among monolingual English-speakers and speakers of English as a second language who had learned English in a second language environment (compound bilinguals) and those who had learned English as a foreign language (coordinate bilinguals). All non-native readers had markedly longer fixations than native readers. Non-natives who had learned English as a second language performed better than those who had learned English as a foreign language.

Paul Kolers (1966) had earlier attempted to measure the effect of reading in a second language. He asked bilingual subjects to read a passage in one language, a passage in the second language and a passage in which the two languages were mixed. The subjects were tested for overall comprehension, in the ability to read aloud and to summarize, Since the readers were bilinguals, comprehension did not vary no matter what the language was. The ability to read aloud and the ability to summarize dropped twenty to forty percent in the mixed mode. Examination of the types of errors and the problems of memory search were interpreted by Kolers as evidence that the encoding and decoding of languages are not symmetrical operations. This agrees with the modern linguistic view that sentences produced through the transformational process cannot be simply "detransformed" in a reverse manner to derive meaning. Kolers also believed that the types of errors produced by his subjects could not be described accurately in terms of grapheme-phoneme relationships alone.

Macnamara (1966) compared dual language reading skills in the solving of mathematical problems by Irish youth. He later summarized his findings in the Journal of Social Issues (Macnamara, 1967). He wrote that problems in reading the non-dominant language centered around an inadequate grasp of vocabulary, phrases and syntactic structures. Subjects pronounced and interpreted words and sentences significantly more slowly in their weaker language. The longer decoding time in the non-dominant language suggests that the decoding task is more difficult. Macnamara observed that bilinguals have more difficulty in noting the relevant facts in a passage written in the second language. In a still latter paper on this same experiment, Macnamara (1970) hypothesized that the slower rate of reading in a second language does not permit the reader time to think about what he/she has read before moving on to the next segment of text.

Hatch, Polin and Part (1974) compared the amount of attention paid to the actual graphemes in text by monolinguals and by bilinguals. Each group was asked to cross out the letter a each time it occurred in a word. Native readers "skipped" the key letter much more frequently than non-native readers indicating a significant difference in the amount of attention paid to the surface representation of a word. This "whole word" processing occurred most often in the function words which account for perhaps a quarter to a third of each page of typical English language text (Carroll et. al., 1967).

The experiment showed no significant difference between native speakers and highly proficient bilinguals.

Highly proficient bilinguals made the same types of errors as monolinguals indicating that their reading processes were the same. In a second similar experiment native English speakers again marked more of a certain letter in content words than in function words. Non-English speakers marked the selected letter consistently even when in digraphs, indicating a letter by letter processing in contrast to the whole word processing and scanning employed by monolingual readers.

Williamson and Young (1976) applied Goodman and Burke's (1972) Reading Miscue Inventory to fifth grade level monolingual and bilingual readers. The results indicated that monolinguals are more sensitive to grammatical and semantic cues. They seemed to sense semantic implications missed by non-native speakers. Bilinguals were less apt to be confused by miscues confirming their more narrow semantic interpretation. Cziko (1978) found similar results when testing monolingual and bilingual readers of French.

Sarah Hudelson Lopez replicated English-language experiments that support the information processing model in Spanish with Mexican-American children. The results indicated the same type of contextual use by monolingual Spanish readers as that used by English readers.

A study by Gomez (1976) indicates that differences in reading processes between bilinguals and monolinguals is probably not an artifact of the teaching process. In a study of the instructional behavior of twenty-six bilingual reading teacher, Gomez noted no significant differences in teacher verbal strategy when teaching reading in English or when teaching in Spanish.

Overall it seems that research done with bilinguals does indeed support the psycholinguistic information processing models of reading. The viability of the information processing model for bilinguals is still open to debate, however. A doctoral study by Elizabeth Evans (1977) reports that propositional and surface structure analyses are relevant and feasible methods for assessing language competence.

The application of the psycholinguistic model to the reality of learning to read--especially in the area of reading in a second language--illustrates some problems. The child comes to school with a receptive knowledge of all of the phonemes and major allophonic variations of his language. The initial reading in the first language for alphabetized languages requires memorization of the sound symbol relationship--that "t" represents the unvoiced alveolar stop /t/. that "v" represents the voiced bilabial fricative, etc. For all such languages there is a high, albeit not perfect, correlation between the written symbol and the phonological system of the language. The learner must be made to perceive and internalized this relationship at either a one-to-one level (phonetics or "phonic" approach) or in a gestalt relationship (whole-word approach). For English the correlation between symbol and phonological system is quite good for the native speaker.

The English-speaking child knows not only the sounds of his language but also their permissible sequences and contexts. Thus he/she not only knows the phonemic /c/ and /l/ but also that they may be arranged /cl/ but not /lc/ at the beginning of a word.

The second language reader is faced with a larger number of problems. First, his/her receptive knowledge of the individual phonemes is imperfect. Second, even if several phonemes are known, their more complicated permutations and environments are not. If /k/ and /l/ are known, is *cl* or *lc* correct initially, medially or finally? How about *kl* and *lk* alternatives? Is /k/ in contact with /l/ pronounced the same as when in contact with other symbols? The two different *K*'s of *cocoa* are distinguishable to many non-English speakers but overlooked by the native.

English is one of the rarer languages in which the reader must process letters to the right of the syllable center before a decision can be made as to the sound of a vowel (i.e. to process "hate" the eye must travel from *a* across *t* to *e* to determine if *a* is to be pronounced /ay/ or /ae/). In other languages which have this phenomenon, the writer informs the reader directly at the vowel that it is of different quality. German, for example, has initial vowel change with the addition of a following vowel but the reader does not have to reach the second vowel and then backtrack to change the first--the writer informs him of the change by the obligatory umlaut symbols (ö, ü).

It is not enough to know the sounds of a language. The sound system is far more complex. English has only a limited number of consonants which occur in word final position but over two hundred and fifty possible word final consonant combinations, all known as acceptable by the five-year-old native speaker. In contrast, the Spanish speaking child knows that his language only permits five single consonants, never in combinations in word final position.

The ability to decode the written symbol system then has a direct relationship to the linguistic competency of the learner. This is not always a one way relationship for mature adult readers increase their linguistic competency largely through reading. However, in the initial reading stages reading is primarily a decoding process where input is checked against established competency.

Characteristics of the Mature Reader:

In any educational endeavor it always seems wise to adopt the "systems" view. Just exactly what is the desired outcome and what must be undertaken to achieve it?

In the area of reading in a second language the ultimate objective should be to read with as much skill in the second language as is done in the first. The disparity between reading skills in both languages or between bilingual learner's performance and the accepted norm for literate monolinguals is then the measure of the success (or lack of success) of the reading program.

The mature reader is able to scan non-technical text and from it gain meaning at a rapid rate, varying from 200 to 1,000 words per minute. Over the years the reader has progressed from a halting almost letter-by-letter pace of about 225 eye fixations per one hundred words of text to about ninety. The number of eye regressions to rescan graphemes has dropped from about fifty in one hundred words to less than twenty. The amount of material "seen" at one fixation has grown from two to three letters to two to three words. By maturity the eye is accustomed to leading the reader's interpretation of text by as many as fifteen or twenty letters as the reader now scans linguistically familiar material in "chunks" largely built around the phrase structure of his language.

This, then, is the "ideal" reader which a successful reading program should produce both in the first language (L1) and in the second (L2). It seems idealistic to work toward this goal in bilingual reading programs--the imitation of successful monolingual reading skills by bilinguals.

Yet research reported by Oller and Tullius (1973) indicates that this may be feasible. In their study of fifty adult readers of English-as-a-second language there was a significant decrease in the number of fixations and an increase in average perception span with an increase in English reading proficiency, The higher the reading test score the more like a mature monolingual reader the students became.

Bidialectualism

There is a considerable and continuing mixture of literature on the teaching of reading to bilinguals and teaching reading to bidialectuals. Even such a recent and worthwhile attempt at addressing reading for the bilingual as Ching's (1976) Reading and the bilingual child treats bidialectualism (the so called "Black English") as a type of bilingualism as does Seitz (1977) in her Social class and ethnic group differences in learning to read. In both of these the non-English speaking child really is not well addressed.

In this monograph the term "bilingual" refers to the person with varying degrees of skill in two languages, not two varieties of the same language. In this broad sense bilingual applies equally to the person who has an oral command of one language and is just beginning to add a second language all the way to the person who has firm control over both the oral and graphic systems fo two languages. In other words, from the school-aged child entering a situation where a second language will first be taught all the way to the educated bilingual.

Since the monograph deals with research in reading instruction, the emphasis is most often on the person with less than a highly developed command of the written skills in one or both languages. Production of a biliterate bilingual, however, will be the ultimate aim of most educational programs and must be kept in mind as the final standard by which success is to be defined. It will also be necessary to distinguish between and discuss separately the younger bilingual and the cognitively mature bilingual.

There does, of course, exist a point at which the distinction between dialect and language is not clear. Linguistically defined dialects are politically defined as languages (Dutch-Flemish) and culturally and geographically separated "languages" are indeed dialects (Shoshoni-Comanche). Bidialectualism in varying degrees is rather common in the English-speaking communities. Most American speakers of "Black" English have at least a receptive competence ("understanding") of spoken standard English. The research literature in this area with the most implications for bilingual education programs is not that dealing with this type of individual but with those persons who have only reception and production skills in a single highly divergent dialect as they come in contact with the school and literary form of the community standard.

Despite much discussion, experimental research comparing reading skills between speakers of the standard dialect and a non-standard dialect are few. Those reported compare the reading ability of the two groups as measured in terms of the surface structure features--vocabulary and phonology (through reading or listening to homonyms). Not surprisingly, students do better on measures designed to test their dialect (Woodward, Rasp). Studies are often confounded by socio-economic factors. Philip Smith (1974), in the evaluation of an English-as-a-Second-Language program in Reading, Pennsylvania, found that reading of surface features alone were not closely related to real language competence. Spanish-dominant children could score meaningfully on the reading sub-test of the _Wide Range Achievement Test_ by pronouncing English words in isolation correctly yet had no idea of the meaning of the words nor could they use the words in sentences--indicating no grasp of the grammatical function of the word.

Sources in the Teaching of the Foreign Languages

There has for many decades been a cross fertilization between the areas of teaching English as a _foreign_ language (EFL) and the teaching of other modern foreign languages in American schools. This flow of information and skills was largely one way; English-as-a-_second_ language (ESL) germinated in American schools almost spontaneously and not until recently has there been a great deal of dialogue or utilization by school-level teachers of English-as-a-second language of the insights and techniques of either the EFL teachers of the foreign language teachers. Also, until recently, the foreign language teacher with training in teaching first language reading and writing skills was a rarity.

The situation has been largely one of a cross flow of information among English and other languages taught as foreign languages and a sort of trial-and-error growth of English-as-a-second language from an English monolingual language arts background. The foreign language group which had learned a great deal from early EFL teachers like Palmer drifted away from this source during the World War II era but has returned to a lesser degree in the 1960's and 70's as evidenced by the growing proportion of EFL citations in the professional foreign language literature. The reverse has not been so true in many ways. English-as-a-second language methodology throughout the 1970's was similar to the foreign language methodology of a decade earlier.

The foreign language educators began to turn to monolingual foreign nations (Ruthman) and to techniques from monolingual reading in the 1960's (A. Smith, 1968). This has been continued throughout the 1970's (Phillips; Holly and King) and will undoubtedly be a continuing source of information in the teaching of reading. Only a few persons have looked at how other nations teach literary to their own language minorities (Garabedian).

The teaching of reading to non-English dominant children in the great majority of American schools has evolved from the monolingual English reading program and is characterized by a constant teacher turnover and the reinitiation of unplanned and hastily devised programs year after year. Many, many teachers come from the language arts area with little or no insight into the nature of language or of the reading process as presenting distinct problems for the non-native speaker. For this reason it seems necessary to develop better communication between English-as-a-second language in basic education and the greater domain of second language research and teaching.

For example, Edward Allen (1976) has applied the reading miscue technique from English reading to analyze the reading strategies of students of French with good results. The literature of English-as-a-second language does not reveal such quick use of techniques from their own language.

Potts (1967) found that there was no degradation of first language reading or general content achievement when students in first and second grade spent fifteen minutes daily studying a second language (French--the comparison group had an equal amount of dance instruction). Potts felt that the 6 - 7 age range was "... a highly favorable period for second language learning." One implication cited was for initial instruction in Spanish for the Spanish-speaking child to teach literacy and content with English-as-a-second language introduced on a daily basis. Potts did not show how much of the second language had been mastered by his experimental group at the end of one or two years of instruction.

While strictly outside the domain of this paper, one of the basic rationales for bilingual education--that students can progress and learn in other academic content areas while learning English language skills has been supported by the work of Ng (1970). Sixth grade Chinese dominant students taught science using both English and Cantonese scored significantly higher on a science posttest than students who had monolingual (English only) instruction.

IV. RESEARCH ON EX-POST FACTO VARIABLES

The influence of ex-post facto variables such as sex, socio-economic factors and minority group membership on general school achievement and on reading in particular has been well researched and documented (Easterling and Stevens, 1972). The additional dimension of the non-English-speaking home is also felt to affect significantly the child's reading achievements. In the past decade a growing number of studies have attempted to assess the effects of these factors on reading achievement.

Inherent in this type of research are a number of factors which must be kept in mind. These include the difficulty in obtaining good samples, difficulty in obtaining and categorizing family and home variables, difficulty in assessing language dominance and the validity and cross-cultural limitations of the criterion measures, often popular standardized achievement tests. Nevertheless, valuable and interesting research is accumulating which supports the general hypothesis that socio-economic variables and parental expectations have an impact on achievement among children from non-English dominant homes that may overshadow the influence of initial language dominance.

Socio-economic status

There is a considerable literature which documents the influences of socio-economic status on school achievement going back to the 1940's (Havighurst and Breese, 1944). Lately, the cultural dimension has been studied (Mishra and Hurt, 1970) and it has been shown that testing procedures favor the student from a middle class environment even on so-called "culturally fair" tests (Goldberg, 1968). Deutsch (1968) demonstrated that the cultural environment influences the acquisition of learning modalities.

As Victoria Seitz (1977) has stated so well, "One of the most replicable findings in reading research is that children from lower-class homes perform more poorly on measures of reading competence than do children from economically advantaged backgrounds" [p. 1]. Both genetic and environmental and combinations of these factors have been advanced as explanations for this phenomenon. For many American minority children both factors may play a part in addition to the linguistic problems encountered as the learner copes with a second language situation.

Bulcock, Clifton and Beebe (1978) have developed a model of school achievement in which six variables intervene in the educational process prior to the subject area to be mastered. These include a group of socializing factors, (1) the father's occupational status, (2) parental education and (3) the configuration of the family--factors which set the socio-economic background. The other three intervening variables are functions of the child: (4) meaningful vocabulary, (5) the [Pigetian] thinking stage and (6) level of reading comprehension. Their model is hierarchical in that reading directly influences content acquisition (in the natural sciences) and all preceding factors influence both content acquisition and the reading process. The authors feel that the reading process is particularly a function of vocabulary which is in turn a function of the socio-economic factors (p. 11). Bulcock _et_. _al_. illustrate the viability of their model in two cultural settings. There are a number of studies in the second language/bilingual literature which support their model.

Socio-economic influences on reading achievement is not solely a phenomenon of the United States. Kyostio (1978) in a study of reading achievement over a six-year span in 597 monolingual Finnish children found evidence to support the relationship of socio-economic status and the educational level of parents with student reading achievement. This research also supports the hypothesis that familiarity with the school process results in higher scores on "intelligence" tests. Similar results have been reported on the reading achievement in monolinguals in Canada (Rodgers, Slade and Carry, 1974).

Francisa Borges (1976) has confirmed the relationship of socio-economic status to beginning reading achievement for monolingual students in a monolingual non-English-speaking school. Her study assessed the relationships of intelligence, reading readiness and socio-economic factors in 174 first grade children in the Caguas and Cidra School Districts, representing an urban and a rural population of Puerto Rico. The readiness measure accounted for the most variance among rural children; socio-economic status contributed significantly to the variance among urban first graders.

Susan Gordon (1969) studied the relationships between home-language usage, socio-economic level and English language ability in three groups of first grade children--Navajo, Pueblo, and rural Mexican-American. Not surprising was the confirmation that there are highly significant relationships between home-language usage, socio-economic level and English language skills. The study is important, however, in that it empirically verifies generally accepted hypotheses with still other cultural/linguistic groups. Poulsen (1971), in a study primarily designed to assess the relationship of English oral language ability to reading achievement, also found significant differences (p.01) on affective-environmental variables between sixty high and low reading achievers ages eight and nine. Her sample was composed of Mexican-American children classed as English-dominant but from Spanish-speaking homes.

Acosta (1971) found that the variables of parents' income level, parents' educational aspirations for the child and the parents' occupational desires for the child influenced significantly reading achievement as measured by the Stanford Achievement Reading Test. His study, based upon an analysis of two groups who scored "high" and "low" on the Stanford Achievement Reading Test did not assess the Spanish/English dominance of the children but simply specified that they must have been in the school for three years and be of Mexican-American descent.

Gardner (1972), in a study of 102 fourth grade children found that the self-esteem of Indian boys was significantly related to their attitude toward reading and their reading achievement scores. The relationships were not significant for girls. All of the children were far below expected grade level on reading scores.

In a study of biographical correlates of reading achievement among 144 children of Puerto Rican extraction in New York, Solimene (1976) found that the higher achieving group tended to describe themselves and their parents as as healthier, have a better parental relationship and have more positive leisure time activities than the lower achieving group. Lower achievers had poorer school habits and attitudes and were more mobile. Of interest is Solimene's finding that while the lower achievers were more committed to the use of Spanish, the higher achievers--even at the fifth grade level--were more committed to bilingualism, using both languages but maintaining a strong affiliation with Spanish.

Research by Alvira-Benitez (1977) in a study of sixty fourth grade children of Puerto Rican background showed that significant relationships existed between reading achievement and five environmental variables-home living environment, economic status, the educational background of parents, reading activities of parents and children and parent-child reading interaction (p. 7528-A). Economic status was evidenced by additional sources of family income and home ownership. Home reading materials most related to reading achievement were magazines while time devoted to educational television and mother-child attendance at recreational activities were also significantly related to reading scores. Noteworthy in Alvira-Benitez' study was that no significant relationship was found to exist between home language dominance and reading scores in grade four. Grade Four marks both a transition in cognitive style for children [close of concrete operations] and also a transition in reading instruction from the mechanics of decoding toward silent and rapid reading for understanding. The demonstratable relationship between parental education and child achievement confirms the findings of Solimene (1976).

Elizabeth Segesta (1977) completed a similar study on a population of Mexican-American children in grade five. She found that although her total assessment of home environment did not relate to student achievement but that there was a significant difference (p.01) in reading achievement favoring students from homes having a higher academic background. She also found that the quality of the home environment was related positively to the reading scores of the Mexican-American males in the study but not to females.

Holick (1976), in one of the few American bilingual studies not directed at Hispanics, reported a significant correlation between socio-economic factors and reading achievement in the experimental Czech-English bilinguals and their monolingual English-speaking control group.

The minority child, both English-speaking and non-English-speaking, is so identified with poverty that this bias continually invades the research area. In the research literature of the late 1960's it is not at all uncommon to see poor and minority children labeled as "culturally disadvantaged" (Bailey; Barbour; O'Neil; Bickley).

Jensen (1973) has summarized the language characteristics of the lower socio-economic child. According to him the "culturally disadvantaged" (i.e. lower than middle-class) child understands much more language than he/she produces. The distinction between language competence and language performance is much greater in the "culturally disadvantaged" child. Jensen states that the comprehension level of the disadvantaged second grade child is only one-third that of the average child; at the sixth grade level comprehension is only one-half that of other children. This is primarily due to lack of control of the vocabulary of the school middle-class culture. There is a one to two-year lag in vocaulary acquisition in this area.

This type of child lacks the linguistic concept of the synonym--the possibility of several names for the same object. This is observable in the choice of a small variety of words used with greater frequency. Sentences are not as mature [i.e. complex] as those of other children; the child uses more simple declarative sentences and fewer compound and complex constructions. Lacking are the creative verbal skills of"labeling" or making up new words, well developed linguistic associative networks for processing new vocabulary and structures and the abstraction and categorization skills manifested by the mature language learner. Lastly the "culturally disadvantaged" child brings with him/her two environmental factors which inhibit learning to read. First, a high tolerance to noise which contributes to the phenomenon that such children learn less from what they hear--contrary to the keen aural perception of non-urban non-literate societies. Second, such children often come from homes where reading is not practiced and likely valued--a known major contributor to successful reading.

It seems likely that many of these characteristics may be extrapolated to the urban poor of other linguistic groups but careful studies by native-speaking child development specialists are lacking. Most bilingual populations in the United States are from lower socio-economic groups and these factors seem both to outweigh and to compound the process of becoming bilingual.

Differences in Reading Achievement by Sex

The differences between males and females in reading achievement have also been consistently noted by researchers. Stanfield (1971) has shown that this difference exists even at the kindergarten reading readiness level. Anastasi and Foley (1949) stated that girls scored higher on national intelligence tests and achievement tests than boys (p.05, Easterling and Stevens, 1972). Holick (1976) felt that females read better than males, regardless of the fact that they might be bilingual. After his research on Czech-Americans in Texas, Holick concluded that "Both monolingual and bilingual females scored consistently higher on the two-part reading tests administered in this study than the bilingual and monolingual males" [p.13]. He found significant differences favoring females in the areas of vocabulary, comprehension, and total reading. Kyostio's reasearch (1978) in Finland has also shown that girls scored significantly better than boys in reading achievement. He referred to past research (Malmquist 1961;

Dykstra and Tinney 1969) which supports the hypothesis that girls do better in reading than boys.

DeBlassie and Stevens (1969) concluded that Mexican-American boys showed more language growth in first grade than Mexican American girls in their study. (p..05; Easterling and Stevens, 1972). Cordova, Pomerantz and Stevens did a follow-up study with the same students in second grade and found that the girls' language growth now exceeded that of the boys'. (*Ibid*.)

Ruark's study (1967) with Indian and non-Indian children in South Dakota demonstrated that boys scored higher than girls in their understanding of concepts found in basic first-grade texts, but not significantly. Gardner (1972) concluded there existed a significant relationship between reading expectancy or potential and attitudes toward reading for Pima Indian boys. No significant relationship in these areas was noted for Pima Indian girls. Segesta (1976) studied the effect of home environment on boys and girls and stated that "There was a significant difference in mean scores of measures of home environment between boys and girls. In both sub-environments of total home environment, the levels of confidence were significant, at the .01 and .04 levels, favoring the boys" [p. 5591-A]. She also concluded that the quality of home environment was related positively to scores on reading achievement tests for the

Mexican American boys in her study.

O'Neil (1968) studied culturally disadvantaged high school students and found that "Analysis of variance of sex differences and reading and spelling achievement indicated no statistically significant differences between boys and girls" [p. 1472-A]. Gross (1978) found no differences between Israeli boys and girls in reading achievement in a Kibbutz school.

In all, it is generally believed that girls read better than boys, especially in the earlier years. There is enough evidence to the contrary to question whether or not this difference is biological or perhaps biological with a cultural or socio-economic reingorcement.

Affective factors

Most articles dealing with reading and the bilingual child are concerned with underachievement in a predominantly poor non-literate culture--or at least refer to a minority in which the mean educational level of the parents is not high and in which little emphasis and opportunity for reading is found in the home. Reading problems of bilingual children of middle or upper class educated parents are rarely reported--perhaps due to the low percentage of these type of children but also, perhaps, due to the fact that most of these children are rather soon successful readers in their new language. There are no reported studies in the retardation in reading of the young children of immigrant college professors.

The "mind-set" that reading is a natural and expected behavior has long been recognized. Dolores Durken in her book Children Who Read Early (1966) pointed out that many children with only average intelligence can and do learn to read early (ages 4-5). These children are largely from homes where parents respect and encourage learning [reading] . Feitelson (1973) observed that Israeli teachers often presented a reading concept and then expected children to employ the item without additional classroom instruction--reading tasks presented at school were partially learned at home after the initial school presentation. She attributed this to home help from parents and peers who helped the child learn to read just as they had helped him/her learn to talk.

This extra-mural reinforcement is often lacking in the lower socio-economic family. Walk (1972) in discussing the problems of Puerto Rican children in learning to read concluded her article with an advocacy of teacher approval and encouragement.

The teacher becomes a surrogate parent and can markedly influence student achievement by his/her behaviors and expectations. A doctoral study by Anita Smith (1970) of reading teachers revealed no significant relationship between teacher personality characteristics as measured by the Catell 16 Factor Personality Scale and student achievement in reading despite the fact that some teachers were readily identifiable as successful or less-successful reading teachers. However, Rosenthal (1973) in a chapter entitled "Self-fullfilling Prophecies in Behavioral Research" cites an unpublished study by Beez in which disadvantaged pre-school children in a Headstart program learned significantly more (or less) depending on what the teacher believed about their potential ability to learn.

Other researchers believe that one answer to reading success lies within the self expectations and self-image of the teacher rather than expectations "for" the learner. Christian (1976) tells of his daughter adopting an English "school" name different--and recognized by her as different--from her real name. He cites the renaming or the mispronunciation of (and therefore a different name) a child's name as a step in the alienation from one culture and the identification with another. It is, perhaps, the identification with the middle-class school culture and expectation which leads to successful reading.

Benita Tang (1974) studied the relationship between bilingual Chinese children's attitude toward Chinese and English. She found that those with a high regard for Chinese achieved better in reading through a bilingual Chinese-English approach. Those who felt more positive toward English achieved better in reading through a English only approach. The implication is great for an English-only approach for Hispanic or other minority students with a low self-esteem and a negative view of their home language. Marcy McKibbin (1976) tested this hypothesis in a study on Mexican-American fourth grade students. She compared two factors--a multi-faceted versus a basal reading approach and the relationship of self-esteem to reading achievement. Her results favored the variegated approach to reading and showed that student self-esteem was not a predictor of reading success. Instead, final reading achievement was significantly related to a final measure of self-esteem. This indicates that self-esteem did not cause reading success, rather reading success raised the child's self-esteem.

Bowes (1972) sought to see if a specific rewarding process would contribute significantly to more and better reading in an experimental group consisting of both Anglo and Hispanic students. It did; students in the experimental group read more, read better and attended classes more regularly when systematically given rewarding behavior.

Kimble and Davison (1972) report an interesting study in which secondary school age Indian students were freed from peer competition but materially rewarded (with a radio, camera or watch) for increasing their reading level a full-year. The students were measured as two or more years below grade level in reading achievement. This study is of interest for it, in effect, inposes the middle-class

Anglo ethic of a material incentive for educational progress--and it seems to have worked. However, no control group is reported and progress over a year of an average of a year might be well expected without the reward.

The advantages of bilingualism are apparently perceived by those students from the Hispanic minority who stayed in school until the secondary level. Patella and Kuvlesky (cited in Christian, 1976) reported that in a group of 10-grade Hispanic youth, eighty-eight percent could read Spanish although only about sixty percent had studied Spanish in school--a large number had transferred reading skills from English and had taught themselves to read in Spanish. A good number--eleven percent of the males and thirty-six percent of the females--reported that they had listed their bilingual skills as an asset in job applications already by the 10th grade.

All in all, it seems that the influence and expectations of the home are a major factor in the background of successful readers from both the middle-class majority and minority groups (Coleman, 1969). Studies of successful readers from disadvantaged families indicate that even if the parental educational level is low, the parents encouraged the children to learn. There was mutual respect between parent and child, hobbies were encouraged, and parents interacted orally with their children. Children were rewarded and punished within established family guidelines. In other words, the parents acted in much the same way as the parents of successful readers from middle and upper class homes.

William Page in his Help for the Reading Teacher: New Directions in Research (1975) quotes Edmund Huey who wrote about the successful teaching of reading in 1910, "The secret of it all lies in parents' reading aloud to and with the child." [p.] Thereby the child knows and respects reading and accepts it as a pleasurable and important expected human behavior. It seems no different for the child from a home where a language other than English is spoken.

While there has been considerable discussion on the problem of dialect and language interference on the reading process in non-standard speakers, little true research has been done. Most published work simply assumes that dialectual differences do contribute to reading problems and list linguistic differences for the enlightenment of the reading teacher (Sizemore, Shuy). The assumption that dialect or non-standard competency affects reading ability is so strong that it has influenced the production of materials and recently (1979) been mandated as a consideration in court-ordered integration proceedings.

The best study of this problem in the bilingual field is that of Lucas and Singer (1973). They present a review of the three positions on dialect interferences in reading:

(1) the pro-position--that non-standard speech interferes with reading achievement (Goodman; Bailey; Labov; Shuy). A second group is the (2) qualified pro-position in which it is held that only some aspects of non-standard speech interfere with reading achievement (Stewart; Baratz; Chomsky). A third group of writers feels that dialectual differences do not significantly interfere with reading achievement (Venezky; Gumpuz). This position is that dialect differences are surface structure and performance manifestations and that all speakers have a similar deep structure and competence level.

Lucas and Singer studied reading achievement in sixty Hispanic children grades 1 through 3 learning to read in English. Their conclusion was that phonology played a noticeable but insignificant role. They felt that the relationship between language processing ability and reading was a function of syntax. They also felt that studies of this type were confounded by the socio-economic factors usually associated with Mexican-Americans.

Summary

Is the non-English-speaking child from a lower socio-economic family entering the school systems of the United States truly a mirror image of his English-speaking counterpart? The question could as well be asked for the high socio-economic but non-English-speaking child but in reality this child is the exception--poverty is much more the rule.

The assumption can be made that there is some uniformity in the cognitive and linguistic development of children in the species--the work of Piaget, for example, was not done with English-speaking children but is widely held to apply across language and culture. The careful study of the linguistic development of children in a variety of settings has not yet been adequately done but what evidence there is points to parallel development among children from different linguistic communities (Menyuk, 1971). If the assumption of parallel (but perhaps not exact) cognitive and linguistic development among children from different language communities is true, then it may also be true that socio-economic status influences language development in similar ways across cultures. If the English-speaking child from a "culturally disadvantaged" home has certain language characteristics which inhibit school success, the lower socio-economic French or Spanish-speaking child may have a similar deficiency in his/her first language. What are the implications for teaching this child to be literate in either the first or second (school) language? Data is lacking.

The assumption is usually made that the learner is linguistically deficient in both the second (school) language and also in the first (home) language. Bilingual educators are used to hearing educated and successful speakers of a language refer to lower socio-economic members of their own language community as "those people really don't speak our language anyway". At the same time one hears from the child's parents, "Our children don't understand that lady--she's from Puerto Rico and we're from Mexico." Both regional and social dialects do exist but--as Protase Woodford has pointed out--when a firm that sells Puerto Rican foodstuffs pays good money to sponsor a television movie made in Spain or Argentina to be introduced by a Mexican and feature Puerto Rican commercials, one can be confident that communication does exist. The other is rhetoric.

The superficial dialectual characteristics of Louisiana and New England French and Californian, Texan, New Mexican and Puerto Rican Spanish have been studied by a variety of linguists. There are more similarities than differences. No research has been found on the differences in the more fundamental aspects of language in the school-aged child that are of real importance to the educator. The primary source of information is to look at what is known of the lower socio-economic "disadvantaged" English-speaking child and extrapolate this information to similar children from non-English speaking homes. In most cases this seems to be useful except that the remediation techniques then chosen are also taken from among those suitable to the monolingual English-speaking child. Perhaps other language speakers deserve a consideration of other language techniques.

The Influence of Culture

In 1968 Arthur Jensen wrote concerning the influence of cultural factors in reading:

> The literature on children called culturally disadvantaged that has so recently proliferated is likely to give the impression...that much scientifically verified knowledge is now at hand...
>
> This is an incorrect impression...

In the succeeding decade little has occurred to invalidate Jensen's statement. In 1979 the state of the literature is one of even greater quantity but of little scientifically verifiable substance.

The influence of the cultural background of the bilingual student in most American classrooms is undoubtedly so closely intertwined with the socio-economic factors and minority status as to make a distinction impossible. Generalizations on cultural factors apart from other influences are difficult if not impossible due to the diversity and small sizes of groups studied. However, there may be culture bound features that may have implications for reading.

It may be, for example, that the learner will be from a culture in which the left-to-right eye scan is not the preferred mode. If the learner has basic literacy in the first language he or she may very well be accustomed to following symbols from right-to-left, up-to-down or down-to-up. While this may seem a small problem, consider the hours and weeks spent in left-to-right training during the pre-reading period. A different ingrained basic approach to learning, such as learning by rote chanting in Yiddish schools (Hodes, 1977) which masks individual performance and does not permit interruption for correction, may mean that a child has never been asked to perform as an individual nor ever have been corrected for faulty production.

A number of generalized statements have been made about school behavior being influenced by the differences in competitiveness between the American middle class and Hispanic and Native American cultures. It has been pointed out that these children came from a cooperative rather than a competitive culture (Dixon, 1976; Rich, 1973). Indian children's success in reading achievement is reported when activities are of a non-competitive nature (Kimble and Davison, 1972). Langley (1956) found reading success when the methods of instruction for Navajo children was related to the lives and the environment of the local group and where the learning atmosphere was warm, secure and directed toward individual growth and development--but the same can be said of many successful educational programs no matter which of a variety of localities and people they serve. Gordon (1969) found a highly significant relationship between English language ability in children and the amount of English language modeling provided by bilingual Spanish-speaking mothers. Poulsen (1971) reported:

> Reading achievement among disadvantaged Mexican-American children is related to the degree of acculturation the children have with middle class information processing pattern. Culturally divergent children are more accustomed to employing visual channels as sources of information utilization (p. 3826).

Overall, it seems that cultural differneces per se are not as proven a factor in reading success as some ethnologically oriented educators may believe. Sanders (1972) suggests that educators should have specialized training in the cultural patterns and values of their students in order to understand how these affect behavior and learning patterns. On the other hand, Lucas and Singer (1973) point out that major contributing factors which interfere with the reading performance of Mexican-American children are the environmental and emotional problems associated with belonging to the non-dominant cultural group.

Cooper (1977) summarizes his study on school achievement of Mexican Americans with:

> ...Ethnicity is responsible for a minor, if not insignificant proportion of school success in New Mexico as measured by performance on (the Comprehensive Tests of Basic Skills). Its effects are interwoven with the negative influences of poverty, limited adult education levels, and unemployment (p. 6).

While purely cultural factors may, in the future, be found to contribute significantly to success or lack of success, they have not at this date been clearly identified nor studied enough to permit definitive statements as to their impact on achievement as defined and measured by traditional school standards. The role of cultural factors in the affective domain is often cited but backed by little research. The role of cognitively different processing styles among children of different linguistic and ethnic backgrounds is not yet well studied and possibly not germaine as long as the instructional process followed continues to be that designed for the monolingual English speaker.

Smolins (1978) compared comprehension styles of standard English-speaking children and speakers of a very divergent dialect (West Indian). Smolins found that the only skill in which the dialect speakers performed better was when a story was read aloud by the teacher and the student were asked to respond orally. Although the differences were not statistically significant, she interpreted this to indicate that these children were very good at extracting information from oral language but not through reading. The implication is that the children might have been culturally attuned to better oral processing than standard English speakers. The hypothesis, however, is not proven.

Carol Dixon (1977) writes in general about the differences in learning strategies one may expect to find in the Mexican-American children. These are based upon the hypothesized non-competative nature of the Hispanic culture. Dixon advises teachers that Mexican-Americans might become more interested in learning and make better progress through activities such as peer-teaching, language experience and a cooperative rather than a competitive learning environment. Sherfey (1975) studied the relationships among attention span and achievement of Mexican-American children. He found that there was indeed a relationship between attention span and reading achievement and that there are individual variations in achievement. This is merely an echo of what has long been known about the reading process. Sherfey suggests that the differences in attention span between Mexican-Americans and other ethnic group children (i. e. monolingual English speakers) needs to be studied. In light of the wealth of material available on attention span, he seems to have missed a golden opportunity to have done so.

Langley (1956) was one of the earlier researchers who addressed specialized reading for the American Indians. Her work, actually beginning in 1953, was addressed largely toward making a social and philosophical case for initial literacy in L1 (Navaho) and ways to make reading material more palatable and relevant to the Indian learner. Much of what she called for seems to have finally been developed twenty years later (Spolsky, 1975). Langley, however, did not specifically address the teaching of reading in detail nor did Rich in a paper on the same topic to the

International Reading Association almost twenty years later (1973).

Rich still speaks in generalities and from a philosophical position. He discussed the non-competitive nature of Indian cultures, stressed initial literacy in the mother language and illustrates why school achievement is not perceived as important by the Indian as by the Anglo. He concludes with guidelines which center around the recognition that Indian children are a culturally different minority.

One of the rare experimental research studies on the influence of culture on conceptualization is the doctoral study of Roger Ruark (1967). He attempted to measure differences among objective, subjective and relational concepts between two groups of ninety Indian and ninety Caucasian first graders drawn from reservation, rural and urban settings in South Dakota. Ruark found that when adjusted for a "culture fair" intelligence test (Catell), significant differences existed between Indian and White children in conceptualization as measured by his instrument. The greatest difference lay between reservation Indian and the reservation white. If one could hypothesize that the reservation Indian was perhaps closer to the Indian culture and language than rural or urban Indians and that the reservation white may well be the child of professionals employed in the Indian service then this would present a polarization which would explain Ruark's findings of the greatest significant differences in conceptualization. His work seems to have been worthy of additional study but none was found in the literature.

Despite the title of his paper, "Some language and cultural differences in a theory of reading" (1969), Roger Shuy speaks almost exclusively to the linguistically divergent surface forms of Standard and "Black" English dialects. Nothing is said of cultural differences which may inhibit reading other than that the child's store of lexical items may be different from that of the teacher, the school and the reading materials. There is no discussion of the influence of culture other than its linguistic manifestations.

Since a major review by Engle (1975) of research on initial literacy in the home language there has been little or no scientific attempt to study the issue of the efficacy of initial literacy in the native language. Both Anderson (1976) and Lado (1977) have written of the many advantages that logically follow initial native language literacy. Both stress that this could even be done in the pre-school years. Anderson in particular makes a case for initial home language literacy to be taught to children at the pre-kindergarten level between eighteen months and three years. Both Anderson and Lado's articles have to be classed as rhetoric rather than research. In particular they raise the questions of the age of initial literacy and its corollary, "How much of a command of language is a necessary prerequisite to literacy?" Secondarily, since early childhood literacy must be to a great degree a function of the home, they do not address the lack of parental and community influence on reading when the parents and community largely represent a linguistic and socio-economically disadvantaged sub-culture.

Ingram and Elias (1974) stressed the necessity of education in the dominant language in a 1974 article entitled "Bilingual education and reading." Their hypothesis is that the reader's internalized linguistic representation of reality ("world-model") generates alternatives of meanings. For effective communication both communicators--writer and reader--must have a linguistic commonality. When learning is through a second language (L2) the world-view may be only partially and poorly formed. Ingram and Elia advised that if L2 is the medium of instruction that it should begin at a very early age. They felt that reading in L2 should only be started after initial literacy in L1 and after L2 is well established--no research data was cited.

Differences in learning style

Despite a flurry of recent study and research, very little is truly known about the psychological processes of bilinguals, especially as they relate to the teaching-learning process. As noted previously, almost all studies on bilinguals have dealt with the socially disadvantaged.

Most studies, therefore, are heavily biased by socio-economic factors. Lambert (1979) in a study cited previously has developed evidence to show that early bilingual boys (under age 5) apparently process thought differently than late bilinguals (after age 11). Since school programs typically deal with second language learning after age 6, research on bilingual learning strategies among socially advantaged learning is most often found in the field of foreign language education--cognitively mature students learning a new language. The approach most often used by recent researchers is learner introspection.

Baecher (1976) in his paper on bilingual children and cognitive style analysis lists three questions about the cognitive styles of bilinguals that have implications for reading instruction for bilinguals:

> ... what symbols does the individual prefer to use in solving problems?
>
> ... is the bilingual student characteristically a "listener" or a "reader" for information?
>
> ... does the bilingual child tend to reason in categories... in contrasts... or in relationships... ?

Assumptions about learning styles for children from other cultures are often made by well-meaning Anglo educators based upon cultural stereotypes, i.e. "Everyone knows that French speaking children are well organized and logical thinkers and thus learn better visually while Hispanics came from an oral and non-literate background and thus learn best aurally." Such categorization has yet to be proven in reading instruction. Indeed, it has yet to be well established for English-speakers. It is usually hypothesized that adolescent middle-class English speaking children learn better visually. Yet an unpublished study made by Geraldine O'Neill and P. D. Smith in 1965 on over two hundred and twelve Ohio students ages 13-20 indicated that approximately half may have had a visual language learning dominance and half had an aural language learning dominance. Less than ten of the two hundred and twelve could not be categorized as visual or aurally dominant.

Keating (1972) in a study of methods of teaching vocabulary to adult bilinguals found that there was no significant difference among scores of groups taught vocabulary visually, auditorially, kinesically or through a combination of the three. The type of subject (bilingual penitentiary inmates) and the limited learning task (ten words) make the study of interest but with little external validity.

Medley (1976) investigated the effect on second language learning of teaching students literate in their first language to be sensitive to recognition clues and context cues in that language. Students taught such skills in Englisn scored significantly better in Spanish reading measures than those who were simply presented Spanish to read. Again the small size of his groups (twenty-three divided among three treatments) compromise the validity of his study.

Both Keating and Medley do point directions for additional research on reading which seems not to have been pursued.

A more recent and perhaps more significant study was conducted by T. V. Nguyen (1978) on the learning styles of children acquiring a second language. Forty elementary and junior high school children participated in three separate experiments. The first indicated that there was indeed a significant relationship between age and the more likely he/she is to respond in a categorization mode. In the second experiment it was found that there was a disordinal interaction between language learning approaches and student responses--life-situational approaches produced better results with syntagmatic responders; an analytic approach enhanced the responses of paradigmatic learners. The implication is for charging teaching style with the age of the bilingual. The third study indicated a relationship between the two categories of respondents and cognitive style. Nguyen hypothesized that the shift in categorization and response type correlated with the shift from field dependence to field independence.

The introspective approach to determining what strategies are employed by beginning second language readers can only be effective with students able to review and verbalize their own processes. June Phillips (1975) reports on an interview technique and some insights obtained as to how mature readers utilize contextual guessing to decode meaning from a second language text. Papalia (1975) conducted a similar study and reported twenty-four vocabulary acquisition strategies employed by literate learners of a second language.

Hosenfeld (1977) extended the interview technique of beginning reading students and analyzed the students' (French and Spanish learners) responses against their actual performance. She found that a significant number of learners redefined the learning task to suit their own strategy. Unless meaning was not an overt consideration a significant number of students did not assign meaning to sentences. Students missed or skipped grammatical points not considered essential to meaning. A significant number of students translated from written L2 into oral L1, indicating a cognitive predisposition to utilize the already existing language network.

The implication of this research for bilingual reading programs is to insure an adequate command of L1, both oral and graphic, in native bilinguals in order to facilitate attack strategies and translation accuracy.

Stodolsky and Lesser (1967) found district cognitive patterns that differentiated Jewish, Chinese, Puerto Rican and black children. While achievement within each ethnic group was influenced by social class, cognitive patterning within each group remained unique. Kleinfeld (1973) found that Eskimo speakers also have a differing type of cognitive abilities are fostered or not according to the values and uses of them by members of a particular ethnic community. Differing cognitive styles have also been noted (Ramirez and Castenada, 1974; Vaid and Lambert, 1979). Research in this area has been rather limited and deals largely with field dependence/independence (Vasquez, 1979). Vasquez points out that students may achieve well on school measures because their cognitive and socio-cultural styles coincide with the presentation and expectations of the teacher.

Vasquez (1979) points out that virtually all bilingual curricula contain the linguistic and cultural components but seldom include what he terms the "psychoinstructional" dimension. This dimension embraces the interaction of the intellectual and personality traits of the learner that derive from cultural (including linguistic) and social factors with the instructional process. Vasquez believes that special attention to the psychoinstructional dimension is indeed important in the education of non-English-speaking children since the present psychoinstructional dimension is derived from and is best suited for the English-speaking middle-class American.

In total it appears that although much is made of cultural differences in bilingual learners, little is truly known and less is utilized by teachers in planning the instructional process. This is an area which truly does need considerable more theoretical research and measures of practical implementation.

V. RESEARCH ON READING READINESS

Reported research on reading readiness in non-English speaking children generally is simply on the application of training and instrumentation developed for monolingual English speakers (Pauck, & Sepulveda). Predictably, non-English speaking children do not do well when measured by English language readiness instruments and these in turn indicate a probability of low achievement on English language reading achievement (Mayans, 1966; Pauck).

Reading readiness has as its basic goals two major thrusts— (1) the physical and psychological preparation for the readings process and (2) linguistic readiness. No specific research or references were found which refer specifically to the first of these thrusts in non-English dominant children. The basic assumption seems to have been made by the profession that the psychomotor skills necessary for successful reading are the same for both English speakers and non-English speakers. For some skills this very well may be true—left to right eye scaning, for example. For perceptual and cognitive readiness the possible differences across languages and cultures have not been systematically studied, at least not the level of practical instruction. Readiness programs for monolingual English-speakers are simply given to non-English-speakers with, at most, directions in the home language and, perhaps, home-culturally oriented illustrations and examples. It is the second area—a hypothesized prerequisite oral competency for reading—that has received the most attention in bilingual education.

Reading techniques familiar to most teachers have been developed on the premise that the learner has a rather full command of the language. The average pre-school child does have a large store of linguistic knowledge although it may be imperfectly developed in all areas. Receptive skills preceed productive skills. English-speaking children, for example, do not always have a complete control of the consonantal sounds of English until age seven (DeVito, 1971) yet they are expected to read words which contain these consonants. Indeed, they are taught to read with perhaps an incomplete control of as many as a third of the consonantal phonemes of English.

The syntax of the native language seems to be largely mastered by average children by age four (DeVito). The size of the child's vocabulary at school age has been the subject of a wide range of estimates. There is some feeling that the vocabulary of pre-school English-speaking children has been growing in recent years. The question must remain unanswered since earlier child vocabulary estimates are not based upon the same techniques and premises as more recent work. It is commonly held, however, that the child comes to school with a vocabulary of about 2,000 words. This number increases several fold in the first year or two of school.

What of the person expected to live and work in a second language. P. Smith (1971, 1980) has pointed out that there is usually no real operation definition of the amount of a second language that must be mastered by a learner in order to communicate effectively. It has been shown that an adult needs to have a command of approximately 1,800 linguistic items (structures and words) in order to operate at a minimal level in a second language community (Renard and Heinle, 1969). In other words, a person learning a foreign language must approach the language competence of a native-speaker aged five or six in order to survive. Renard and Heinle point out that to have an understanding of approximately eighty percent of what is going on around an individual requires a knowledge of a relatively small stock of linguistic items, 1,500 to 2,000. This approximates the linguistic sophistication of a second or third grader. Two things are immediately evident—first, that it requires hundreds of hours of contact and practice to reach a mastery of items and, second, that even if this level is attained the person is only operatin at eighty percent of the potential of a child. A mature adult who is continues to be limited to this level of understanding is regarded as retarded.

Unless the beginning reader is already fluent in both languages, there remain only two possibilities for the bilingual reader. Either he can (1) be taught to read in his first language, building upon the language competency developed in six or seven years of life or (2) literacy must be introduced before the learner has an adequate control of the second (school) language. The two possible approaches, initial literacy in the home-language (L1) or reading as one component of a comprehensive second-language (L2) program, are both worth reviewing separately.

A good command of the oral language as a prerequisite to successful reading is axiomatic to most reading theorists (Gibson and Levin, 1975). A comparative study of the oral and written forms of English has been done by Wolck (19). He found that there are indeed substantial differences--so much so that he suggests a fourth alternative "distinctness" to the usual three views of the relationship between oral and written language: "oral primacy", "written primacy" and "equivalence." Wolck suggests that the oral and written codes are not directly convertible--placing himself counter to the reading model of Carrol (1964). The more recent and more sophisticated models of Goodman and Ruddell better account for these differences.

While the basic premise of an adequate oral base for developing reading skills seems superficially irrefutable, the application of the oral primacy hypothesis has been tested several times with interesting results. In a major study of second language learning, Philip Smith (1970) showed the high correlation between adolescent aged student scores on oral and written tests. Overall, however, students exposed to less oral and more written material and direct instruction in grammar and vocabulary achieved as well as or significantly better on standardized language tests--both written and oral--than students with primarily oral instruction.

Cooper (1964), in a comparative study made with Chamorro children in Guam, studied the effects of delaying the introduction of reading in order to concentrate on developing oral language skills. Three first grade groups were selected. The treatments were (1) a full year of oral work before reading, (2) a half-year of oral work before reading and (3) simultaneous introduction of oral English and reading. At the end of the first grade the children with the oral program were significantly better in spoken English skills. The students then all entered a basal reading program and were subsequently tested in reading in the fourth grade. There were no significant differences among the groups. Cooper interpreted this to show that there was no advantage to the year of oral language instruction--and, conversely, that there was no disadvantage in delaying reading for a year. He attempted to rationalize the lack of support for his hypothesis (that the oral group would do better) was perhaps due to the nature of the oral program which was not based upon an adequate constrastive analysis of Chamono and English.

The child approaching reading instruction in an American school setting is usually four to six years of age. If of average development he/she is entering the Piagetian stage of concrete operations. The child has a knowledge of a major portion of his/her language by age four. These include (DeVito, 1971).

1. a receptive control over permissible phonemic sequences;
2. knowledge of which are the terminal or non-terminal morphological forms;
3. knowledge of permissible and non-permissible syntax;
4. the ability to paraphrase and circumloquate;
5. the ability to relate sentences based on their deep structure similarity;
6. the ability to detect the semantically anomolous.

Research done with other language groups indicates that the order of first language acquisition may be universal in children (Menyuk, 1971).

The most rapidly expanding area of language for beginning school children is vocabulary acquisition—a process which continues throughout the lifetime of a human. Vocabulary size in children has been widely studied with somewhat differing results. Smith (1926) estimated that children at age six had a vocabulary of 2,500 words. DeVito (1971) suggests that this number is probably greater today. The identification and use of this vocabulary has been the subject of some study in order to develop initial reading texts within the range of the child both in English and in other languages (Cobbe, 1977). It has been demonstrated that language activities can enrich the child's competence (Fodor, 1966).

Reading instruction in English was for years based upon the belief that readiness was complete at age six and one-half years—i.e. school entrance. "Readiness" was defined as the maturation of (1) visual perception—the ability to perceive figure-ground relationships and configurations and the development of visual memory and constancy or attention to details—and (2) auditory perception—awareness (hearing), discrimination and auditory memory. More recently, with instruments and techniques to assess these factors individually, reading readiness has assumed a more flexible nature and has moved away from a fixed age (Durkin, 1970).

Concomitantly, however, the adoption of the so-called "psycholinguistic" approaches has placed more emphasis on the importance of the child's command of the spoken language. Goodman (1970) has pointed out that reading is only incidentally visual since the reader sees what he/she linguistically expects to find. Therefore, Goodman writes, success in reading requires highly developed language competence. Smith and Goodman (1971) write:

> It is becoming clear that reading is not a process of combining individual letters into words, and strings of words into sentences, from which meaning springs automatically. Rather the evidence is that the deep-level process of identifying meaning either precedes or makes unnecessary the process of identifying individual words.

Ekwall (1969) points out that this theoretical approach to reading has resulted in a move away from emphasis on perception via the visual channels and has increased emphasis on the auditory perceptual channel. Bateman (1968) states that children with an auditory modality preference learn to read better than children with a visual preference. Dykstra (Robertson, 1968) reports that boys do not learn auditory discrimination as well as girls while Jensen (Robertson, 1968) found that lower socio-economic children have less well developed auditory and visual channels. Deutsch (1968) found that children from lower socio-economic groups consistantly have more difficulty with the auditory than the visual channel.

Ekwall (1968) summarizes research on modality preference by stating that such learning preference seems to be an innate capacity of the child. Both channels reach maturity at about age nine. The preferred modality has improved or matured earlier than the less preferred, indicating that there is not necessarily concomitant growth in both channels.

In terms of the introduction of literacy in a second language, the discussion above lends not necessarily to clarity but to confusion—confusion which will hopefully contribute to questioning and research. Second language instruction has since the early 1960's been predicated in the writings of the neurologist Penfield (1959) who stated that if it is to be successful, foreign (second) language learning must take place between the ages of four and ten ". . . in accordance with the demands of brain physiology." This recommendation, seized upon happily by language teaching specialists to support the introduction of a second language in the primary grades has face validity but is really unsupported by subsequent experimental educational research. Recent work by Vaid and Lambert (1979) indicate that in terms of cognitive processing for males, bilingualism is different if achieved *before* age five or *after* age ten—coinciding somewhat with the Piagetian concrete operational stage but opposite to the recommendation of Penfield.

Pomerantz (1970) found that *California Test of Mental Maturity* scores correlated generally with English reading achievement in bilingual Spanish-speaking New Mexican third-graders (N=159) but that the large size of the standard error did not permit use of the I.Q. test score as a valid predictor of student achievement or score achievement. Pomerantz felt that the early administration of the test might prove useful in identifying potential problem readers at the first grade level. Vloutidis (1972) studied the relationship between *California Test of Mental Maturity* scores on 160 Delaware children from four linguistic backgrounds and measures of reading skills and a measure of bilingualism. He found generally high significant corelations between the degree of bilingualism and intelligence test scores and between intelligence scores and reading scores. The overall effect was that, regardless of the individual home language (Greek, Italian, Polish and English)—basic overall language ability was reflected in both intelligence test and English reading scores. There was no significant difference among the groups on English reading test scores indicating that the bilingual children had achieved a high measure of English ability.

Brekke and Williams (1974) studied the relationships among five Piagetian conservation tests, a non-verbal intelligence measure (Draw-A-Man) and the *Classroom Reading Inventory* in thirty-eight bilingual Indian second graders. The results showed a correlation between the Piagetian tests and reading but not between the Draw-A-Man measure and reading. This study is important due to the frequency of use of the non-verbal Draw-A-Man test to measure intelligence in non-English dominant children. This study challenges its validity.

The Prerequisite of Oral Proficiency

Sally Kaminsky (1976) begins her paper on "Bilingualism and learning to read" with the statement, "Instruction in reading assumes that the learner has control of his or her spoken language", (p. 155). This basic premise undoubtedly is important in learning to read in the mother language--indeed, learners with low oral language proficiency are deemed to be retarded and remediation includes expanding and strengthening the oral language skills prior to reading instruction. For the immature bilingual this same premise may indeed be true. For the more mature individual learning to read in a second language it may not. Egyptologists certainly have little proficiency in oral ancient Egyptian yet read hieroglyphics with ease. This type of reading is more akin to a mental translation and yet is practiced by many adult second language learners. Therefore, it seems worthwhile to examine the premise of the oral language base as a prerequisite to reading in a second language. Is oral proficiency a real necessity? If so, how much and for how long?

The actual extent of the oral language ability of entering school children was the subject of much research in American schools during the first two-thirds of this century. The difficulty in assessing children's vocabulary and syntax is enormous. Most early researchers gathered information on children's vocabulary often with the ultimate aim of providing educational writers with lists of words that could be used in instructional materials (C. F. Edgar Dale's list of 1,375 words known by 75% of the First Grade Children of Columbus, Ohio.) Only recently have researchers begun to carefully describe the acquisition of syntax and morphology.

As printed out earlier an operational definition of proficiency in a second language was long lacking--just how much of the second language had to be acquired to meet basic needs? The French, faced with the problem of teaching their language to speakers of a wide variety of other languages, were the first to scientifically address the problem. Francais Fondamental is a basic list of vocabulary and structures derived from an extensive study of oral and written French. Mastery of the approximately 1,800 items of "Fundamental French" permits an individual to operate at about an eighty percent efficiency level in everyday French (Reynard and Heinle, 1970). Other languages have since the advent of the computer. The list includes most European and some African and Asian languages. Several counts have been made for written English. The American Heritage word count reveals that the one hundred most common words in English account for forty-eight percent of the text on a page of written English (Carrol, 1967). This correlates highly with other less scientific estimates that an individual can "get along well" on about a 2,000 word vocabulary and that most persons operate on less than 5,000 items in daily life. It is believed that if the child comes to school with a vocabulary of one to two thousand words that this doubles during the first year of school (Menyuk, 1971) and continues to expand at a rapid rate. This indicates that the child's "Language Acquisition Device" (Lado, 1976) is functioning well. It is here that the child in a bilingual program falters; the language acquisition device is tuned to a different system and cannot operate as efficiently when processing a new language.

Studying the effects of pre-school programs on French dominant students, Michaud (1971) found that bilingual students who had a year-long Head Start experience achieved significantly higher on tests of oral proficiency than students who had only summer-long programs. Students from disadvantaged French-speaking homes had significantly more restricted English language vocabularies than English-speaking students from similar socio-economic levels. This confirmation of the obious was necessary to provide a solid foundation for future research. Morris (1968) reviewed a numbered of Title I remedial reading programs for non-English dominant children and reported that the lack of control and good data made their reports (usually favorable) of little value although these programs stressed the presentation of oral English. Bradley (1970) studied the relationship between oral English proficiency and reading in a group of Louisiana French-speaking black children. She found a significant correlation between their oral language proficiency test scores and their reading achievement. Edwards (1970) in a paper presented to the International Reading Association Congress stressed again the basic premise--adequate language development should precede reading development.

With a growing acceptance of the information processing model of reading, the rationale for an adequate oral base prior to reading becomes stronger. Wilkinson (1974) in an article entitled "Oracy and reading" pointed out that the ability of children to predict text patterns is enhanced because their oral syntactical knowledge is more advanced than the sentence patterns used in their textbooks. Ingram (1974) supported the need for oral language development before reading for bilinguals. Ingram was particularly concerned with the "world model" which the learner used to perceive meaning. Ingram is an advocate of the linguistic relativity hypothesis.

Still the results of research on the importance and/or need for an oral proficiency in the language prior to learning to read it are contradictory.

In the Wooden and Pettebone (1973) El Paso study no one of three approaches (basal reader, linguistic, and linguistic plus perceptual) proved significantly better. However, she felt teacher variables may have obscured treatment variables. Not surprising, teaching orally increased listening comprehension scores and teaching perceptual skills increased those skills.

Barbara Chapman (1977) described her success in teaching reading to bilinguals and illustrated this with a case study of a female Hispanic student. Chapman particularly feels that the need for mental translation handicapped the student and that an adequate oral base followed by reading through the Language Experience Approach were keys to success with the non-English dominant student.

Hodes (1977), however, reported that her Yiddish dominant readers were able to process written English with no apparent need to relate their oral production of the written symbols to the correct pronunciation of oral English. Aupéde (1974) points that for older or more professionally oriented students, the written language can be learned directly without an intermediate oral phase. It is indeed true that a person can decode a script without knowing the oral language--mentally translating from a script directly into meaning. However, the author has observed that persons reading in a new language (Gaelic) will make up a pronunciation of their own based on English for processing purposes. Aupéde points out that teaching French through reading is now being practiced in Latin America. Teaching a foreign language primarily through reading was the dominant American approach during the 1930's and 40's.

A number of special programs to develop oral competency have been attempted (Sepulveda, 1976). One of the few such specialized oral English programs to be truly tested vis-a-vis a "regular" classroom environment has been reported by Elvia Rodriguez (1976). She compared the effects of a specialized oral ESL program on student reading achievement when compared with both Anglo and Hispanic students who had participated exclusively in a monolingual English program. Aside from the predictable higher achievement among girls, little significance was found which favored the special ESL program. A regular reading program with English monolingual emphasis and peer instruction was more beneficial for English dominant Hispanics in terms of vocabulary building. For Spanish dominant students the two programs were of equal value in vocabulary building. For English dominant Mexican American first grade girls, the regular school program was clearly more beneficial. Rodriguez' study clearly indicated that for the students she measured "mainstreaming" was the best way to improve English reading scores.

Based on the oral primacy hypothesis, Sepulveda (1976) developed a specialized formal English language learning program for Hispanic children in grades K-3. Her belief is that Hispanic children are not given enough linguistic and cultural preparation prior to teaching them to read in English. She reported success with her specialized program designed to move children toward a middle class Anglo school setting in nine to twelve weeks of instruction. Her linguistic emphasis was on syntax rather than vocabulary. The oral primary hypothesis is the basis for the development of the special English Language and Concepts Program for Spanish-speaking Pupils (Molina and Hanson).

Arnold (1968), reporting on the findings of the second year of the "San Antonio Language Research Project", reported that Hispanic students who had a predominantly oral

English approach spoke more creatively than those who did not but that the oral approach did not enhance subsequent reading scores. The large number of uncontrolled variables makes the study reported by Arnold some what questionable but certainly worth considering. Data collected during the third year of the study was not reported until 1972. The results continued to show no support for the audiolingual approach with emphasis on early and free reading.

On the other hand, reading may influence oral language acquisition. There is a demonstrated high intercorrelation among language skills (P. Smith, 1970) which also been demonstrated in non-English-speaking children.

Gladys Lipton (1969) in a study to determine the role of reading on beginnning second language instruction found that fourth grade children learning French achieved better when reading was included in their instruction. Her conclusion was that a Listening--Speaking only approach to a new language deprived students of a useful tool. An earlier study in Spanish at the secondary school level by Estarellas and Regan (1966) showed that simultaneous presentations of second language sounds and letters accelerated pupil progress in the meaningful learning of both short and long utterances. There are those who advocate teaching only the receptive skills of listening and reading with the belief that the productive speaking and writing skills will follow without formal instruction. Davies (1978) proposed special courses in the receptive skills only. His arguments seem to be counter to the prevailing oral prerequiste hypothesis.

Two Soviets, A. Esyutina and B. Lapidus (1972) have attempted a series of experiments to test if there is a transfer from reading to an audiolintual skill (listening). If so, then students could build oral competency through reading rather than the reverse. Using German, they attempted to ascertain if words learned through reading would be understood subsequently when heard orally. Their results indicate that in initial stages there should be a strong emphasis in building accurate oral second language skills. They also found that for best transition, reading skills should be at a pace close to listening skills.

Almost all of the early (1960's) research into teaching reading to the non-English speaker concerned the relationship between reading and oral language skills in younger children. These were largely characterized as "application" rather than research. Most of these early studies accepted the oral proficiency prerequisite as a sine qua non and either did research to find ways to expand oral proficiency or failed to address cogent questions. Typical of this type of research is a study by Condie (1961) which asked if Hispanic students would learn oral English better if their teachers were given specialized training in oral language teaching techniques. They did. Another such study is that of Doris Ching (1969) which sought to assess the impact of various oral language teaching strategies on reading among Hawaiian children and that of Sharon Wooden and Timothy Petibone (1973) who compared methods of teaching reading and developing oral language proficiency among New Mexican Hispanic children.

Tsuhima and Hogan's (1975) report of lowered verbal and academic skills for Japanese-English bilinguals as compared to monolinguals does not give details on the extent of language usage in the home other than to report that the mothers were speakers of Japanese and the fathers speakers of English. No mention is made of possible confounding by the Japanese-English pidgin current in such unions on American military installations or the effect of exposure primarily to the "women's language" level of Japanese. The study does deserve replication wit more control of variables and detailed reporting.

In summary, reading readiness for the child in a bilingual situation currently (1) assumes an adequate command of the spoken language and (2) uses the same general techniques and materials that are used for monolingual reading readiness. Oral and perceptual skills can be taught in the bilingual situation. There are some conflicting positions and studies on the best time to prepare for second language reading and the belief that bilinguals are deficient in both their languages has yet to be proven.

VI. THE LANGUAGE FOR INITIAL LITERACY

The recent movement toward "bilingual" education in the United States has seen a concomitant advocacy of first literacy in the learner's dominant language. This has not been supported by any great amount of conclusive research support until very recently and is in contrast with recent reports of successful bilingual "immersion" programs in which home language literacy is deferred until well after second language literacy.

Initial literacy in the home language is not new in American education. Indeed it was common and in many areas the norm from colonial times until the early Twentieth Century (Donahue, 1964). With the rise of widespread public education in place of local parochial education initial literacy in the child's home language became the exception rather than the rule.

The basic assumption underlying the renaissance of the native literacy approach is that the most productive approach to the development and education of the non-national-language speaking child is to first teach literacy and other basic skills in the language he/she knows best. Reading skills are then transferable to the national language after the child has gained linguistic and cognitive maturity, better self-concept and a better grasp of the second language. Concomitantly, the acquisition of school content in other areas has not been retarded by the need to wait to teach this material until there is a good command of the second language. They are taught in the first language.

On the face of it, the argument is simple and logically appealing. Reading instruction can begin earlier if there is no need to wait for second language mastery. The learner's home language and culture are recognized as worthy and important. The child is not kept from other learning by being denied access to literacy. On the other hand the economic, social and political forces of the community often make initial home-language literacy programs difficult if not impossible. Materials are sometimes scarce if not non-existant. More often there are few or no trained teachers competent in the student's home language. Overriding is the community pressure to force education in the dominant national language. Only when the minority language has high prestige value can this pressure be easily overcome.

Most of the recent case for initial literacy in the vernacular is based on the work of Nancy Modiano, who studies the education of Indian children in the state of Chiapas, Mexico. Starting with a small scale study reported as her doctoral dissertation (Modiano, 1966) and expanded and reported in subsequent publications (Modiano, 1968, 1973), she reports significantly more favorable second language literacy results for students who have initial literacy in the vernacular language over those who begin immediate instruction in L2 literacy.

Kaufman (1967, 1968) studied the effect of introducing Spanish literacy to Spanish-speaking adolescents who tested at below grade level (7th) in English reading. The experimental group who had received identical instruction in English reading but no instruction in Spanish reading.

The sine qua non of the primacy in L1 in bilingual education was repeated by Saville and Troike (1971). They stated that "...The basic skills of literacy transfer readily from one language to another (p. 50)". While this may be true it is in itself not a necessary reason for initial literacy in L1 since the transfer of reading skills presumably would also work from L2 to L1. In an ERIC paper commissioned for the Center for Applied Linguistics, Weber (1970) stated there was increasing indication that initial literacy in L1 was better. She wrote that first reading in the mother tongue had long-term benefits for the learner's later education in that "It gives children immediate skills that are transferred to reading in the second language with more success than those thaught to read the second language directly" (p. 22). No research was cited to support her statements and while neither Modiano's not Kaufman"s work was listed among her references but Venezky's--who supported the opposite position--was included.

Venezky (1970) reviewed the literature available at that time and arrived at the conclusion that the native literacy approach still "...has got to be proven scholastically superior" (p. 338).

In actual practice schools most often develop programs with either initial literacy in English (L2) or simultaneously shared (L1 and L2) literacy (Shore, 1974). A few schools in heavily linguistically impacted areas began literacy in the vernacular and delayed the introduction of English (Feeley, 1969). Michel (1971) and

Herbert (1972) advocated initial native language literacy as a way to instill cultural pride and to enhance the self-concept of the child. Teachers can be trained to teach reading in the vernacular (University of New Mexico, 1973). A solid research base is, however, still lacking although the professional literature alludes to "mounting research evidence" that supported linguistic and academic benefits of early instruction through the native language (Colombani). Two educational researchers surveyed the "mounting evidence" in the middle 1970's and found that there truly was very little and what there was was less than conclusive.

Evelyn Hatch (1974) reviewed not only the research on initial native language literacy but also the areas of verbal retardation and instructional methods for teaching reading to non-English-speakers. Her conclusion on the initial literacy issue was that evidence was inconclusive.

Patricial Lee Engle's "Language medium in early school years for minority language groups" (1975) is the best done and most elaborate study of the initial native language literacy question to date. She carefully delineated the problem, the arguments of the proponents of each group and made a thorough and objective assessment of the research literature to date. Engle labled the two approaches as "Native-Language" (initial literacy in the vernacular, L1) and the "Direct Method" (instruction to fluency and then initial literacy in the national language, L2). She found in the literature only twenty-four studies on the question of which only seven were experimental studies. Of the seven, she felt only four noteworthy enough to discuss in detail.

From 1948 to 1967 two major studies were conducted in the Philippines (Oratoa, 1953; Ramos et. alia., 1967) contrasting native language instruction with immediate instruction in a second language, English. The results of the two studies were contradictory, one favored initial vernacular instruction, the other a direct introduction to schooling in English.

Engle reviewed the report of Modiano (1968) at some length. Modiano reports that Indian-speaking children achieve significantly better in national language literacy (Spanish) after a program in which they were taught native-language literacy. Engle (pp. 297-98) raises a number of questions regarding confounding variables which leave Modiano's research open to questions of both internal and external validity. Major criticisms are (1) the schools compared are from three different school systems, (2) teachers contrasted represent different ethnic groups and pedagogical training and (3) the basic premise of oral fluency in L2 before literacy in L2 was not met--rather Engle characterizes the Moliano study as a study which "...clearly favored the Native Language Approach over poor instruction (not the Direct Method L1 as described)" (p. 303).

Also reviewed at length was a major study done in Uganda (Lagefoged, Blick and Criper, 1971). This research analyzed intospective ex-post facto data on over 1,500 students who completed a questionnaire about their initial schooling experiences. The results seemed to favor the Direct (L2) approach. The fourth experiment reviewed in detail was the Canadian "total immersion" model (q.v.). In this model (Lambert and Tucker, 1972) the Direct (L2) approach is the experimental group and the Native (L1) is the control group--the reverse of the Philippines and Mexican studies. In Canada the population is different in that the two languages more approximate each other in prestige and socio-economic status. The results of the St. Lambert study support immediate and complete instruction, including literacy, in the new second language.

Engle felt that none of these four studies nor twenty others cited really addressed the question, especially as it pertains to the typical school situation in the United States even though several of these were conducted by Americans (Richardson, 1970; Herbert, 1972).

Spolsky (1975) reported that in 1970 two thirds of six-year-old Navajo children still did not know English when they began school. The reading needs of Navajo children and the state-of-the-art of available materials at that time resulted in the development of policy and criteria that led to the establishment of the Navajo Reading Study. This major project was designed to investigate the feasibility and effect of teaching Navajo children initial literacy in Navajo. This required that the project first produce a quantity of Navajo reading materials. This study was initially reported in the TESOL Quarterly (Rosier, 1978). The results of this important study are just now becoming available in detail. They strongly support the case for initial literacy in the home language. A detailed report by Holm and Rosier is in press. Spolsky (1979) writes:

> The study, longitudinal at Rock Point School, shows clearly that the effect of initial literacy teaching in Navajo (and of other factors described in the full report) is to lead to highly significant improvement in English reading scores from the third grade or so on; by the 5th or 6th grade the

> children are close to national norms, i.e. one to two years ahead of comparable Navajo children (early at Rock Point and still elsewhere) taught in English from the beginning.

No detailed critique of the study is possible since the entire report is not as yet generally available. However, the stature of the institution and research reputation of the persons involved give the study face validity pending a careful review.

Reading in the "Immersion" model

The most successful bilingual/bicultural programs reported to date are the so-called "immersion" programs developed by Lambert, (1969; Lambert and MacNamara, 1969; Lambert and Tucker) and his associates in Quebec and now being replicated in other nations (Swain, 1974; Barik and Swain, 1975; Cohen, 1974). In this type of schooling children who spoke English as a first language were placed, as a group, into a class where the sole medium of instruction was French (L2). Although peer communication is permitted in L1 at the kindergarten level, the teacher(s) only speak L2 and it is the accepted school standard. It must be stressed that neither L1 or L2 is generally of superior/inferior socio-economic status and that literate bilingualism is an expected community standard. All students in the class share the same linguistic problems and all are, in effect, "linguistically segregated from other children in the school." For a detailed explication of the immersion model and its differenciation from "submersion" and "mainstreaming" programs see Cohen (1976).

The immersion programs have proven very successful (Lambert and Tucker; Barik and Swain; Cohen, 1974). After an initial pre-reading and readiness period students are introduced to reading in L2, the language of the classroom. Native language reading is delayed until Grade 2 (or after Grade 3 in some cases--Mc Dougall and Bruck, 1976). Some students readily transfer skills and in the initial program literally taught themselves to read L1, English (Lambert, 1969). Immersion programs now generally have formal introduction of L1 language arts in Grade 2 and students test not signigicantly different from thei peers who have monolingual instruction in L1 reading following the normal curriculum. In addition they are significantly advanced in L2 skills, both oral and graphic. (Barik and Swain).

The sequencing of L2/L2. has also been studied in the Canadian immersion programs. Introducing L1 literacy in grade 3 versus grade 2 does not signigicantly retard students in native-language literacy and the delay until Grade 3 has some pedagogical advantages (Mc Dougall and Bruck). Cziko (1976) found that English-speaking students achieved equally well in reading in both L1 and L2 (French) in Grade 4 no matter in which order order initial literacy had been taught.

"Partial" (half-day) immersion models have not been as successful as "full" immersion (Cowan and Sarmed; Cohen 1976). Not all children experience success in the Canadian immersion program (Trites, et. al.,1976) for reasons that are not yeat clear. Fortunately--and in contrast to many programs for minority groups in the United States--these children could be transfered back to a monolingual L1 class without immediate lasting stigma or long-term socio-economic deprivation.

In a European replication of the model where the second language is a foreign language, Ekstrand (1978) reported that Swedish children with a significant early exposure to English (L2) as a medium of instruction did better on measures of Swedish (L1) than a control group of monolingual Swedish children.

Merrill Swain and James Cummings (1979) have written an excellent survey article on bilingualism and cognitive functioning as they relate to education. They report both studies which show a negative and positive relationships between bilingualism and learning. The negative research tends to be the older studies and those of more questionable methodology. More carefully controlled recent studies tend to show positive relationships between bilingualism and verbal abilities. Swain and Cummings point out that in general negative achievement is associated with minority education and positive results are generally obtained when the second language has high perceived social and/or economic value. They also suggest that the data they review may indicate the existence of "...threshold levels of linguistic competence which a bilingual child must attain both in order to avoid cognitive disadvantages and to allow the potentially beneficial aspects of becoming bilingual to influence his cognitive functioning" (p. 14).

The reviewers state that immersion (in L2) education (q. v.) achieves greater educational results but that other approaches may be needed to attain the "linguistic threshold" in the first language and to overcome the negative contributions of minority identification and low socio-economic status. Therefore, they suggest the delay of education in L2--ergo, they support initial education in the vernacular

(L1), stating:

> Specifically when the home language is different from the school language and the home language tends to be denigrated by others and selves, and where the children come from socio-economically deprived homes, it would appear appropriate to begin instruction in the child's first language, switching at a later stage to instruction in the school language (p. 14).

Conversely, Swain and Cummings recommend that where the home language is a majority language and literacy valued, initial instruction should be in the second language. In view of the work of Modiano now supported by the results of the Navajo study, initial literacy in the home language would seem to be warranted in the majority of bilingual programs in the United States unless the immersion model can be used in areas where the minority language has achieved significant social status.

VII. METHODS FOR TEACHING READING TO BILINGUAL LEARNERS

This review of the literature has revealed that there are fundamentally two approaches to classroom practices for teaching reading to children in bilingual programs. The most widely used approach is to use methods and techniques which have been proven successful with monolingual readers. Some prerequisite language skills may be taught and some superficial modifications made but the techniques are almost identical to those seen in good English reading programs everywhere.

The second approach is to adopt techniques used by foreign language educators. These techniques are in the minority but offer some interesting suggestions. Since the foreign language education field is overwhelmingly aimed at cognitively mature students, an important but largely missing area are second language reading techniques specifically designed for and empirically tested on younger children.

Before entering into a discussion of classroom techniques, it is of interest to note that two leading language learning theoreticians, Anderson (1976) and Lado (1977), have recently advocated preschool (early) reading for non-English-speaking children. Lado's paper, summarized in Hispania, is of interest. It is based upon reports of early reading (q.v.) and assumptions about the written Spanish language but overlooks the Hispanic reality in America. Lado describes the posited "Language Acquisitism Device" in every normal human child by means of which children naturally and rapidly acquire language (McNeill, 1970). He notes the distinction between reading as language acquisition (unconscious) and as language learning (conscious). In the acquisition paradigm the child "breaks" the graphic code on his/her own inititive based upon his/her internal language competency. In the learning paradigm the child is shown the sound-symbol relationship and learns the rules for their application.

Lado advocates that pre-school children, especially Hispanics, can and should be encouraged to teach themselves to read. He argues that Spanish orthography is simplier than that of English and "...pre-school children can learn to read Spanish more easily than English..." (p. 535). Lado believes that initial Spanish literacy skills will then transfer to English. He closes with the statement about Hispanics that "If they are taught to read in both Spanish and English before entering school...they would realize the full advantage of their educational potential..." (p. 535).

Lado's paper is of theoretic interest but not of practical value. While it is true that there are some children who teach themselves to read in the pre-school years, but these children are almost always from homes where literacy is an accepted, highly valued and routinely expected of family members. Printed material, usually at the child's level, is often in evidence and easily available. Parents usually read to children and encourage the children to learn how to read. Lado's paper neglects to mention that these factors are not available in a majority of the homes of Hispanic children. His observation about how advantageous it would be if children were taught to read (in two languages) before coming to school could well be heard in any faculty lounge. It would indeed be a born if even a noticable percentage of children could and would teach themselves to read before coming to school—but this is simply is not the case.

Methods of teaching reading in English have been variously described, categorized, labeled and sub-divided. In the main there are two major divisions—an alphabetic sound:symbol approach (often called "phonics" in the United States and a morphological unit approach ("whole word"). Children are able to learn by both of these. It is held that teaching formalized rules and linguistic labels to the child is fruitless (Vygotsky, 1962). Most of the so-called "methods" of reading instruction are combinations in various proportions of the two basic approaches. Rodriquez (1969), for example, lists six ways to teach reading in Spanish" (1) a global or analytic approach (whole word); (2) phonetic methods: (3) verse or rhyme methods; (4) the alphabet method (phonic); (5) learning to read through writing; and (6) the onomatopoeyic method. These all are able to be seen to be variations or one (or both) of the two basic appoaaches.

In terms of school programs for the non-English-speaking children there is the added dimension of the second language. Here again approaches separate into two basic thrusts—(1) treating the children in essentially as if they were monolingual English-speakers and (2) teaching reading as one of several components of a program in English-as-a-second language. In the first of these the texts and techniques are simply transfered from the monolingual classroom with minor modification. In the second there is considerable attention to developing an oral language competency to which literacy is being added. In an early comparision of the two different approaches (and a third intermediate combination), the approach designed for monlinguals—a basal text—was found to be more successful in developing reading skills in first grade Hispanic children (McCanne, 1966a, 1966b). This result was also found to be true for more mature Hispanic students in a comparision made at the ninth grade level (E. W. Smith).

Ebel (1978) observed twenty-five bilingual classrooms in southeastern Pennsylvania and found that the major emphasis was on developing oral vocabulary and that the predominant reading approach was that of whole word analysis. Students ranged from first to sixth grade level in age. Teachers generally reported that specialized reading instruction was terminated when students reached a second-grade reading level.

June Phiplips (1975) in an article intended for second language teachers stresses the need for teaching decoding (phonic) skills. Walton (1975), writing about the relationship between short-term memory capacity and intermediate reading skills—breaking through from letter-by-letter decoding to sustained reading—states that there is a need to teach letter clustering as a strategy to facilitate word prosessing. Bienuller (1977) advances support for the processing approach with a study which found that words in context could be read faster than words in isolation. The process—single letters in a phonetic relationship to phonetic (letter) clusters to words-in-context—seems to be a viable approach yet is not used in many bilingual programs (Ebel, 1978). Freeman (1977) reports on the "Creative Action Reading Program" adapted to teach Hispanic kindergarten children sound-symbols relationships in Spanish. The experimental class achieved significantly higher (p. 1) than the control class as measured on sub-tests of standardized readiness instruments. However, the experimental group did not achieve significantly higher than the Spanish-speaking sub-population of the control group which did not have this specialized instruction. This would seem to indicate that factors other than the experimental instruction may have contributed to the measured differences in achievement between the total Control Group (Hispanics and English dominants) and the Experimental Group (Hispanics only) although Freeman did not so comment.

The so-called "linguistic" approach to reading has been highly recommended both for first language (Bloomfield, Fries, Lefevre) and for second language reading. A comprehensive set of materials has been developed, the Miami Linguistic Readers, and--more recently--attempts have been made to reconcile structural linguistics and transformational linguistics into an up-dated "linguistic" approach (Weber, 1970). The "linguistic" approach as usually applied is a scientific application of English phonetics to teaching the sound-symbol system with some attention to teaching bound morphemes and basic sentence patterns. One of its greatest contributions is not instructional but in providing the teacher with greater insights into language and the reading process.

The Miami materials are the only basal series specifically built upon the linguistic approach and intended for non-English-speakers. While widely used over the past decade, they have been criticized in that the most elementary materials are perhaps linguistically sound but content poor for the older non-reader. The constraints of limited patterns and sound combinations make reading material difficult to construct in an interesting fashion. Franke (1976) advocates a linguistic approach but with the caveat that the language encountered must be useful for everyday living and coping.

Teaching the writing skills at the same time as reading seems to have an influence on reading achievement although no supportive experimental research could be found that dealt specifically with younger children. Estarellas and Regan (1966) found that the introduction of reading and writing simultaneously to older learners of a second language had advantages over teaching only the receptive reading skill. Rodrigues (1969) listed the "kinesic" approach of Schooll as one way of teaching reading. Here writing is introduced early and acts to reinforce reading skills. "Writing" in this sense implies more than forming the letters but includes copying reading texts and restating material already read. Paine (1974) reports success with this approach when teaching reading to persons unacoustomed to English (Roman) script. Aulls (1975) reports greater motivation to read in bilingual children whose written work is displayed and praised. He feels that the relationship is great and needs to be exploited by teachers—writing is a natural means of using and reinforcing new reading vocabulary.

The Language Experience Approach

Due to the concurrent teaching of both the English language and English literacy in many "bilingual" programs, the Language Experience Approach is often used for an initial introduction to reading. The approach itself is well-extablished (May and Elliot, 1971). Thonis (1970) gives a series of activities for using the Language Experience Approach with children learning English as a second language.

Thonis discusses both the advantages and disadvantages of the Language Experience approach. In general the best rationale for this technique is that it allows the learner (1) to see the direct connection between oral speech and written symbols and that (2) it introduces reading within a context of familiar experiences, vocabulary structures. Among the disadvantages listed by Thonis are (1) the greater responsibility on the teacher for direction and management and (2) the randomness of the language used in the approach -- the lack of vocabulary control and a planned, organized sequence of reading skills. Although Thonis presents suggested activities for a successful Language Experience Approach there is no real discussion of the implications for children with limited language ability other than the statement that an adequate command of the oral language is a prerequisite to reading (p. 140).

The Language Experience Approach has been successfully used with students from disadvantaged socio-economic backgrounds. Packer (1970) reported good results with the method plus a combined kinesthetic and visual-motor component for developing a sight vocabulary as suggested by Silvia Aston-Warner (1963). Packer reported that student generated vocabulary is markedly different from the vocabulary of the typical basal reading series. The Language Experience Approach has also been successfully used in a monolingual Spanish reading program (Reddin, 1973). Here the advantage cited was the individualization of reading instruction.

Kennedy (1973) advocates the Language Experience Approach for teaching reading to adult E. S. L. learners. Student generated materials were typed and duplicated for class use and eventually collected into several volumes of reading matter. Garcia (1974) similarly advocates the experience approach for Mexican-American children on the rationale that it can portray the cultural background of the students better than a commercially prepared general text.

In the only experimental type research encountered, Carline and Hoffman (1976) compared the Language Experience Approach with a "conventional" basal reading program which combined phonics and sight word instruction. One hundred and eleven children in Colorado migrant education programs were tested. The results (one-way analysis of covariance) indicated that the language experience students achieved significantly high (p. 5) on the criterion post-test than did the conventional "control" students. There are, however, some reservations that must be made. The teacher's confidence in the method correlated significantly with student achievement--i.e. teacher factors may have overshadowed significant gain due to method. The report also indicates that data was gathered on twenty-five teachers, a rather large group considering that there were only 111 students tested. Student attendance was also a signigicant contributor to achievement (p. 2) and was also related to teacher factors. Therefore, the extraneous variable strongly overshadowed the attempt to compare results of teaching methodology.

Mallet (1977) compared the language experience approach vis-a-vis a conventional reading laboratory with ninth grade remedial readers in British Columbia. The students were all native Americans. A matched group with repeated measures design was used so that all students acted as both experiment and control. No significant difference was found between the two approaches.

There is, therefore, scant research which compares the Language Experience Approach with other methods in a bilingual or English-as-a-second language setting. It certainly seems a worthwhile topic for additional research. Such studies would need to consider the limitations of a language experience approach for minority children as presented by May and Elliot (1971). The experimental approach may become a self-limiting method which does not permit the learner to read outside the severely restricted domain of his/her command of a second language.

Individualization

The diversity of second language skills in the bilingual classroom presents a real problem to the teacher. While accustomed to dealing with a wide range of abilities within the monolingual classroom, teachers of bilingual children encounter these same characteristics compounded by varying degrees of communication or non-communication. Initial judgments about language proficiency are often erroneously based upon shyness of glibness. True formal measures of language competency do not exist and those which are available tend to measure superficial performance aspects of phonology and vocabulary. In addition there is wide variation in other learning related factors. Wooden and Pettibone (1973) investigated eighteen variables in 522 Hispanic students. These variables were related to primary mental abilities, reading profiles and concept symbolization. The authors were impressed by the wide diversity of skills encountered and suggested that reading skills could be improved by a careful and individual diagnosis of each Hispanic child.

The implicatoon of this--as it is for every person--is a curriculum which provides for the individualization of instruction. "Individualization" was very much in vogue in the early 1970's and was applied to the teaching of reading in bilingual programs (Anaheim City Schools).. Children were instructed through learning centers, learning activity packets and audio-visual media.

The use of machine presented reading instruction in bilingual programs has received a little attention, most of it negative. The literature is replete with studies reporting gains in reading achievement using small group instruction supplemented by a variety of machine presented materials. The author found in his open-space bilingual middle school that Hispanic students completed machine presented programs successfully but could not retain material or find material meaningful unless each lesson was monitored by a tutor and the material covered was reinforced with a discussion with the tutor. Irene Sanek, in an unpublished study done in Philadelphia, found that Hispanic and Asian children learned material better through a teacher presentation even when it was essentially identical to the instruction presented by a Systems 80 teaching machine with teacher follow-up. The implication of these observations is that humanization of instruction is paramount.

Melaragno and Newmark (1968) reported that in a comparison of a variety of instructional classroom arrangements the most effective was a one-to-one tutorial system. New York's Project Mini-Teachers was built around trained tutors working with a one-to-three ratio with children from a variety of non-English-speaking homes for six after-school hours per week. The ninety subjects showed significant gains in reading skills although it is not clear what proportion of the gain is due to the extra time for instruction or to the tutorial approach. Sandra Fax (1976) showed that supplementary instruction in English reading for American Indian children contributes significantly (p. 1) to increased reading achievement. In a doctoral study of the effect of supplementary reading programs in eight Bureau of Indian Affairs schools in the Dakotas, Fox found significant gains in students in all but two schools. She also reported marked but not significant gains in reading scores in schools which were closer to the Title I ESEA established criteria for remediation programs.

Informal individualized instruction has been a necessary feature of most reading instruction where American teachers deal with non-English dominant children in their classroom. The more formal approach to reading based on individualized learning packages systematically managed through learning centers has been successfully used in a variety of situations. The author found this a useful technique in an open-spaced bilingual school but made no comparison with a "control" class. Potter and Ragahopalan (1978) have described a modular approach developed to teach reading skills to Brazilian adults with specific professional and vocational goals. No comparison with another approach was reported.

Overall the individualization of reading in the bilingual setting seems to be a function of student:teacher ratio, peer group size and adequate classroom management. Machine aid learning seems to be useful only when accompanied by a human interlocutor.

Teaching Vocabulary

Mature readers continue to expand their vocabularies through their life times through the printed medium. Any basic reading methods text contains suggested exercises for readers to expand and enhance their ability to derive the meaning of a new word through semantic and linguistic contextual clues. When these fail students should be taught to use the dictionary.

The second language learner cannot avail himself of the contextual information available to the native speaker. He or she is often driven to guessing at the meaning of a new word when the other words in the sentence are only partially known. The pitfalls of dictionary use to a non-native speaker are legendary. Dictionary entries use synonyms which may be mistakenly used by the non-native.

Richards (1970) developed a specialized dictionary of vocabulary and idioms gleaned from specific texts being used in reading programs for Indian children. His purpose was to teach necessary vocabulary that would be encountered in the basal text. Pre- to post-test scores indicated a significant vocabulary gain for the experimental (dictionary) group over the non-dictionary (control) group in grades five and six. Scores favored the experimental group in grade four but were not significant. Richards felt his study worthy of replication and application but it does not seem to have been implemented.

One answer to conveying the meaning of new words at the elementary reading level is by the use of pictures to illustrate vocabulary. These are useful but can be misleading. At intermediate and advanced stages the most useful technique is to gloss the new word in the reader's first language--assuming literacy in L1. Glosses may either be inserted in the text, be used as marginal notes or footnotes or be placed in a separate place. The gloss differs from the dictionary in that entries are simplified and show only the particular meaning used in the text. Holly and King (1971) have found that glossing had no real effect on vocabulary acquisition in a second language but did permit more rapid reading of unfamiliar text. Belasco and Parent (1970) make an excellent case for parallel bilingual reading tests. Evans (1976) has adapted this technique to increasing reading skills in a second language by systematically deleting increasing larger portions of the first language translation. No research is cited by Evans to support his technique.

Teaching techniques in the field of English-as-a-Second Language generally parallel and lag techniques in foreign language methodology. It is not, then, surprising to find that the audio-lingual emphasis of foreign language methodology so popular from 1959-69 has a counterpart in ESL beginning in the late 1960's. The influence of this approach has been directed not only to the oral language base of children but toward reading readiness and reading instruction. Horn (1966) compared the effect of intensive audiolingual instruction in (1) English, (2) in Spanish and (3) non-audiolingual instruction on the reading readiness of Hispanic children in San Antonio. Twenty-eight classes, 584 children, roughly divided equally among the three approaches were studied. No significant differences were found among the three approaches. Nevertheless, teachers continued to believe that an oral approach was a prerequisite to good reading skills (Sepulveda, 1976). Knight (1969) reported on a follow-up to the project reported by Horn. His data was gathered on second and third grade Hispanic children in San Antonio. He again found no significant differences in reading achievement based on aural-oral (audiolingual) or non-audiolingual instruction prior to reading. Concurrently, Philip Smith (1969) found no advantage for audiolingual instruction as it related to reading instruction in the foreign languages. Indeed, Smith found audiolingual instruction significantly retarded second language reading scores on standardized tests. Vallete (1969) explained this finding by pointing out that the audiolingual approach restricted student vocabulary acquisition and thus, in turn, restricted the ability to score on reading tests. This was Smith's point, that students with a prolonged audiolingual period did not have enough language base to be able to read as well on final measures as did students with more learning through reading.

Since there is still another lag from ESL methodology in the United States to applications abroad, it is not surprising to find a spill-over from the audiolingual approach can be seen as late as Elammy's article in the English Teacher's Journal in 1976. Elammy lists a number of oral activities including choral reading by the class as it mimics the teacher's oral reading--a technique that could have been seen in many foreign language classrooms a decade or more earlier but was abandoned in the late 1960's.

Various applications of Cloze techniques have been shown to be useful in first language reading instruction (Sinatra, 1976). The "snap" reading technique is one such variation used with early second language reading. Students follow as the teacher reads orally and, at the snap signal, supply the next word in the text. This procedure integrates listening and reading and requires that students follow the text carefully (Cortez, 1975). No experimental research is reported to confirm results.

Specialized Reading Materials for Non-English Speakers

The person with a limited command of English might best be helped to read through the use of specially prepared reading materials. These materials might take into account the limited command of English vocabulary and syntax and provide for successful reading within this limited domain. Perhaps some variation in the mechanical printing or layout would assist the non-native speaker to better read English.

Aside from the strict matter of an inadequate knowledge of lexical items, it was early pointed out that non-English speakers had difficulty understanding English idiomatic expressions found in standard reading texts (Yandell and Zintz, 1961; Adkins, 1970). Therefore, introductory material might better paraphrase idiomatic expressions.

Staff reading specialists for Charles Merrill and Company have identified three levels of reading: the free reading level, the instructional level and the frustration reading level. At the instructional level the child is able to read correctly ninety-five percent of the text. When this falls to ninety percent--or one error in every ten words--the reader is at the frustration level.

There exists good reason, therefore, to keep text in close correlation with the vocabulary of the child. For this reason the Language Experience Approach (q.v.) is widely used but it has its limitations for non-English speakers. It is perhaps easier to teach the vocabulary of the text to the reader rather than write the text to serve the individual. Since the child is presumably learning English as the second language, the reading text should closely articulate with the vocabulary and structures that are presented in the English language curriculum (Seliger, 1972; Cowan, 1974; Nilagupta, 1977).

Beyond careful vocabulary and syntactical control there are a number of other interesting reading aids available to the person learning to read English, especially if he/she has already become literate in their first language. Giuliani and Johnson (1971) describe a reading system in which the reader is presented with three classes of words--high frequency words he is expected to already know, second order words that are marked as "important--learn" and glossed in the margin on the first occurence only and third order, infrequent words, that are always glossed for the new reader since they are not as important to learn immediately.

Prussakov (1975) is concerned with the widely observed phenomenon that excellent readers in one language often never progress beyond a word-by-word deciphering of a second language. In order to foster better processing skills at the phrase-structure level, he reports success using a special "spaced" text. The text is edited and extra space inserted between syntagnemes (phrase groups) to teach the student to read in units larger than the word. The spaces are reduced to normal single-spacing as students progress.

Parent and Belasco (1970) report success teaching students to read a second language by using bilingual parallel texts. It is known that reading can both be introduced at the same time as the oral component of a new language and that reading can be used to teach new vocabulary and structures to students as efficiently or even more so than through the audiolingual medium (Lipton, 1969).

The greatest need for carefully sequenced texts lies not in vocabulary control but in the careful simplification of sentence structure and in the selection of content (Morrand, 1976; Nilagupta, 1977). Aronson (1977) found that Hebrew-speaking college-aged students had significantly better reading comprehension when the syntax was simplified even if vocabulary and content remained constant. In a study of Brazilian reading texts Bohn (1977) found that the syntactic level of the sentences used in basal reading texts in Portuguese was rather narrow but still greater than the productive ability of first grade children. There are some dangers inherent in learning to read from simplified materials. These dangers and some suggestions on how to avoid developing inappropriate second language reading strategies have been discussed by Honeyfield (1977).

A study by Grudin _et_. _al_. (1978) indicates that texts in translation have a higher difficulty level than they did in their original language--a finding, if supported by additional research, which suggests that reading texts avoid using translated materials.

Non-Standard Orthography

Since there is not a near-perfect correlation between the spoken and written forms of English, standard orthography presents problems to both native and non-native readers. The problem has been addressed in three ways: (1) English spelling reform, (2) coping with the situation through a combination of phonic and whole word approaches and (3) the advocacy of a more phonetic introductory spelling system that would be used for initial literacy and then discarded in favor of the standard orthography. The first of these is beyond the scope of this monograph, the second is the reality of the school, the third has achieved some minor notoriety and some success in both monolingual and bilingual situations.

An orthography based upon their analysis of the sounds of English was advanced by Chomsky and Halle (1968). In an extensive discussion, Steinberg (1971) points out that this system would hold no real advantage in teaching English reading. In an intriguing experiment in which Chinese characters were substituted for English word forms, Pismilia (1971) showed that for some children there need be no phonetic representation of words in order to be able to read--something obvious to readers of non-alphabetic languages, computer programs and "dead" languages.

The most successful intermediate script has been the Initial Teaching Alphabet (I.T.A.) although other systems are still being developed (Kent, 1979). The value of the I.T.A. has been successful and carefully demonstrated in bilingual education. Murphy (1971) compared initial literacy in Mexican-American children through the I.T.A. with literacy through the standard orthography. There was a significant difference in favor of the I.T.A. group.

Robertson and Trepper (1974) also reported that the initial teaching alphabet can be an effective tool in teaching beginning reading to Mexican-American children. In a comparative study with fifty-six fourth grade students, the half who received initial reading instruction through the Initial Teaching Alphabet scored significantly higher on a number of measures including reading grade level.

Rosin, Poritsky and Sotsky (1971) reported an imaginative approach to teaching reading to eighth grade inner-city children identified as "reading disabled." Based on the success of Asian children in learning to read despite the lack of an alphabetic writing system, Chinese characters were substituted for thirty written English words. Students were able to learn to read these words after twenty-five to fifty-five hours of tutoring in the new graphic format. No comparisons were made with a control group receiving the same amount of tutorial instruction in reading.

The French linguist Martinet has developed a system of teaching reading through a special phonological writing system--the "Alfonic" system (Stembert *et*. *al*., 1976). No comparative studies *vis*-*a*-*vis* standard orthography have been located.

Non-standard orthographical approaches are perhaps of interest from a theoretical view but do not reflect the present reality of reading instruction. As long as and until the English spelling system is modified, research on reading in bilingual education using non-standard orthography must remain a curiosity.

VIII. TEACHING READING TO ADVANCED PUPILS

The difference between the beginning reader and the mature reader is the "grey" area in reading instruction--the area largly unstudied and seemingly unstudiable. Reading theoreticians and practioners can describe both the process of initial reading and the characteristics of the good reader. The transition between the two in which decoding becomes faster, comprehension more automatic and contextual processing strategies are developed is still an area where much is unclear in mother-tongue reading. Reading as a decoding process is often not taught beyond the third grade and improving reading as a skill is emphasized after that point. In the second language dimension reading beyond initial decoding is even less addressed.

Brumfit (1977) points out that most of the research on second language reading has either been limited to initial literacy on one hand or toward the critical analysis of literature on the other. Even today, the teaching of a second language most frequently leads to a study of the literature of that language. Due to the vocational and technical need for English throughout the world this is not as true for English-as-a-second language as for other European languages as foreign languages although students abroad still learn English through literary classics. Even as late as the mid-1960's a research survey of foreign language teaching cited only five references on reading

(Mackey, 1965).

Morris (1968) pointed out to ESL teachers that the second language student faced a serious reading problem in the transition from elementary to junior high school. There is a sudden increase in the difficulty of vocabulary and content. Vocabulary is not controlled. With the additional emphasis on academic achievement there is also an expectation of greater reading speed with high comprehension. Morris felt that reading instruction essentially stopped just when the student needed it the most. She felt that comprehension, not oral production was the biggest need for secondary level ESL students. The difference between first and second language reading speeds was illustrated by Augustin (1967) when he noted that while American college students read approximately 600 words per minute, Malaysian English teacher trainees were only able to average 250 words of English per minute. Augustin did not note, however, that this speed approaches that of many native English readers. Varzegar (1975) found a similar gap between native (Illinois) and non- native (Iranian) readers of English.

A relatively small number of writers (Polister, Owen) and a few researchers (Parent, Albizu, 1976) have addressed the intermediate language learner. One problem, of course, is the lack of a precise definition for "intermediate" (usually applied to the second year of higher education study). Most educators agree that the goal of reading at this level is comprehension with speed. Most would prefer this order, comprehension with speed, to the emphasis on speed with comprehension. There is some debate as to the importance and relationship of the oral language skills and rapid reading with understanding (Brumfit). Some writers feel that oral skills contribute to advanced reading skills (Carroll, 1964; Been, 1975; Freed, 1976) while others believe that at this level reading skills can be relatively independent of the oral language (Owen, 1975; Morris, 1972). In one of the few studies of the effect of listening while reading, Parent (1969) found that listening to a native speaker read the text aloud while following it visually had no significant effect on reading comprehension.

A second area of conjecture is over the use of the learner's first language. Should the student use a dictionary? Should words be glossed in the margin? Parent (1969) demonstrated that for the poor to average student, parallel bilingual texts (i.e. extensive immediate glossing) had a significant positive effect on reading a second language. Only for the higher ability student was there no advantage for a bilingual text over a monolingual text with an accompanying dictionary.

Owen (1975) reports on a course especially designed to teach Lybian students to read specialized material in their vocational area. Students were taught basic grammatical relationships and constructions on the theory that this type of instruction would enhance their reading ability. Sopher and Rosenbaum (1978) describe similar instruction in Israel.

Two different types of reading instruction at advanced levels have been termed "intensive"--concentration in detail on shorter reading material--versus "extensive"--reading a wide variety of material for more superficial comprehension. Brumfit (1977) suggests that these might more accurately be dichotomized as reading for accuracy and reading for fluency. The term reading "efficiency" is a combination of two factors, reading for comprehension _with_ speed. Brumfit (1977) has reviewed the literature supporting both the intensive and extensive approaches to second language reading. The intensive mode has been for years the basic approach to the Classics and in the teaching of French (_explication de texte_). The assumption is that careful and detailed study will result in better comprehension of new text. More recently passages selected for intensive reading have centered around particular linguistic items and in developing more carefully the questioning and discussion techniques which are intended to lead to strategies transferable to new material.

Extensive reading in a second language often begins with lexically and structurally simplified texts. Brumfit points out that the content of most such materials has been characterized as not intellectually challenging by Frechett (1976). In addition, in the foreign language field extensive reading is usually a preparation for future study of literature. In the English-as-a-second language field it often has a more vocational orientation. Extensive reading of unsimplified non-literary material (i.e. newspapers, magazines) is achieving currency in the monolingual English reading program and has been used but not well evaluated in the second language teaching literature.

The "intensive" and "extensive" approaches both have adherents and both lack difinitive research support. As in most things a combination might seem appropriate. There is a recognized need to grade and sequence initial reading instruction in a second language (Rivers) but an examination of reading texts indicates that this is usually only done at the very early stages (Brumfit).

Beyond initial literacy reading material is selected to consist of unedited but high interest text. This type of material has not been experimentally tested against progressively linguistically graded reading materials.

The mature reader, whether reading for information or for pleasure, reads some text at a faster pace and then slows to read selected passages with more attention.

Therefore, both fluency and accuracy are important and not always at the same time. Limited accuracy (i. e. gaining detailed meaning from a small passage) seems easier to achieve than rapid reading while still retaining a significant measure of comprehension. Rapid scanning of text with pauses to pursue in detail sections "flagged" by key words or phrases is a skill used by many advanced readers. A recent innovation in second language teaching has been the use of cognitive advance organizers of "Focus Statements" (P. Smith, 1971). Theoretically these assist the learner to approach and process new material more efficiently. In the application to reading these often take the form of a series of brief statements about structure or vocabulary. Recently writers are using "before" questions to alert the reader to the relative importance of certain parts of the total content--to "flag" passages for closer attention (Coulombe, 1974).

Bismoko and Nation (1974) studied both the transfer of reading skills improvement from the first language to second language reading and the efficacy of "before" questions. Their subjects were Indonesian students of English at a teacher training institution. After pretesting in English the group was instructed in reading skills on a sequence of Indonesian texts. Post-tests were done on English passages. The pre-post increase in English reading speed was sixty-five percent. Their results indicated no effect of the "before" questions of reading comprehension. The "Focus Statement" (P. Smith, 1971) applied to reading ~~selectiens~~ has not been researched.

It has been observed (Oller and Tulleris, 1973) that second language readers make more eye regressions than native language readers. Verzegar (1975) compared the reading skills and attitudes of Iranian secondary and University students reading English with a group of bilingual readers and an American monolingual counterpart group. The Iran University students were in the first (N=63) and second (N=56) years of study at the University of Tehran. All students were proficient readers in their first language. Tests include measures of reading average prose, word-by-word reading, phrase reading and syntactic or semantic constituent reading.

The results indicated that the Iranian University students appeared to have reading "tunnel vision" in their second language and did not use peripheral vision to note information in large units. They did not "chunk" information into perceptual wholes. The Iranians as a whole had a negative attitude toward English but were instrumentally motivated to achieve, peaking at the University entrance level. Verzegar recommended that to improve second language reading skills, students should be trained to *process written* texts for immediate comprehension, avoiding the mediated channel of letter-by-letter decoding and interlanguage translation. The hypothesized transfer of reading skills from one language to another has been discussed for younger children in an earlier section (*q.v.*). The transfer hypothesis has been tested in functionally biliterate adults. Cramer (1975) compared reading achievement between three groups of ten bilingual Malaysian university students: one group received speed reading and comprehension training in English, a second the same type of instruction in Bahasa Malaysian, the third group as a control received no special training. Both experimental groups achieved higher reading scores than the control group in both of their languages. Interestingly, English reading scores were better than Bahasa Malaysian scores for both the groups coached in English and the group coached in Malaysian.

The following year Al-Rufai (1976) conducted a similar experiment with 574 Arabic-speaking Iraqi students. These students were tested in reading in both Arabic and English with a high correlation between first and second language skills. Students were then given training in reading comprehension in Arabic and tested again in Arabic and English two terms later. Speed and comprehension had increased dramatically. This was interpreted as another confirmation of the skills transfer hypothses--

and in the light of Cramer's study supports specialized reading instruction in the mother tongue as the most effective way to increase second language speed and comprehension in mature learners.

Engle (1975) concluded her review of the literature on initial language literacy with a list of still unanswered but important questions. The first of those listed is the hypothesized transfer of reading skills from one language to another. She wrote, "Few investigators covered in this review have considered the question of the specific skills that should transfer from learning to read in one language to learning to read in another ... more intensive work validating ... observations is necessary" (p. 311).

One of the very few studies to address this topic was that of Sarah Thomas (1969) in which she found that teaching literacy in a second language (Spanish) had a significant effect on the English reading achievement of intermediate grade students in a remedial (English) reading program. In Lambert's (1969) "immersion" program (q.v.) the students learned to read L1 without any instruction at all. It has already been pointed out that Cziko (1976) reports no difference in reading achievement no matter in which order bilingual literacy was presented. It is only with advanced and/or mature learners that the case for transfer of skills between language literacies has been more carefully tested.

The effect of reading instruction given to increase reading fluency is influenced by the means by which it is presented to students. Albizu (1976) compared the effects of three approaches to teaching advanced English reading skills to one hundred and sixty-nine lower academic ability Spanish-dominant students in Puerto Rico. The three modes were structured directed tutoring (N=56), non-directed tutoring (N=54) and a traditional large classroom setting (N=56). At the end of one semester the tutorial groups achieved significantly better than the classroom treatment. Directed tutoring was more effective than non-directed tutoring. In the two tutorial approaches the tutor and the tutee both gained markedly. Adjusted achievement scores indicated greatest gains in the order (1) directed tutors, (2) directed tutees, (3) non-directed tutors and (4) non-directed tutees. The implications for the improvement of reading enhancement programs are great.

Brumfit (1977) mentions that during the 1960's many mechanical innovations were devised but that few were integrated into the regular reading program. Although mechanical aids can be observed in bilingual schools, few experiments have been reported using reading pacers or teaching machines in second language reading with more advanced readers. In the 1970's variable speed speech processing became possible and is advertised as being useful in helping students to achieve reading fluency. The primary application of rate-controlled speech to second language learning to date has been in the area of listening comprehension (Flaherty, 1979). An unpublished study by P. Smith (1977) indicates no effect for slowed oral presentations on reading in French. Neville and Pugh (1975) report that training in listening to the compressed (speeded up) oral rendition of a passage while reading it appears to have at least a short-term improvement in reading speed and accuracy. They had ten non-English visitors to Britain follow three passages read at normal speed, slowed ten percent and compressed twenty percent. While admitting that their experiment lacked validity due to the small number of subjects and the uncontrolled variables inherent in living in the second language community, Neville and Pugh felt that their data indicated that slowed reading of a passage contributed to comprehension and speeding the reading made the text more difficult. Their study and that of Smith seem worthy of more controlled experimentation.

Gauvenet (1974) has developed a visual series of cognitive organizers for readers in which text sequence of a literary passage is accompanied by a pair of visuals. The first series is an illustration of the concrete elements (place, time, characters) in the passages while the second is metalinguistic and underlines either the framework of the text or a key phrase and illustrates external emotional or psychological facts. The effect is a visual summary of what a literary analyst would tell students about the text. No research or comparisons were reported.

Fanselow (1974) reported that ninth grade Spanish-speaking pupils were not able to respond with any great depth to non-factual questions about their feelings or reactions to the stories, students resorted to retelling incidents, could not discuss themes and did not notice or attached significance to important details. Such behavior, however, could well be reported as common by many teachers of English reading to English-speaking students at the junior high school level. Freed (1976) reinforced reading skills by using written clues which forced class members to share information orally to solve a mystery in a reading passage. Again, no research on effectiveness is reported. Perhaps not enough attention has been paid to content in the material selected by teachers.

Frechette (1976) has written about the low intellectual content of reading material. Zambia, cited in G. Carrol (1967), demonstrated the poor effect of reading gangster and sex stories on students' compositions. Sopher and Rosenbaum (1978) report good success when teaching reading with specialized science oriented materials. A Philadelphia E.S.L. teacher has stated to the author that his Hispanic students reject materials relating to urban slums since these are a part of their environment and they wish to read to escape.

Sopher and Rosenbaum (1978) report on a two-year experiment in Israel dealing with instruction in specialized scientific English texts. Their format was the "intensive" type with particular attention paid to teaching nominal phrase groupings. Each reading was followed by a test and an analysis of student errors. Achievement was very high but no central group was used for comparison.

In summary, second language reading instruction at advanced levels is in a state of flux. Apparently there is, indeed, a transfer of processing strategies once the reader is past a certain point in the acquisition of the second language. This proficiency level has not been established. Time spent on improving first language reading speed and comprehension has a double reward. The intensive/extensive discussion is not yet settled although motivation provided by texts the learner feels of interest apparently can overcome some skills deficiencies. Considerably more and better research needs to be done.

IX. CONCLUSIONS AND RECOMMENDATIONS

This survey of the field indicates that the area of reading in bilingual programs has resulted in an impressive and growing body of literature. Much of this material is in the form of program reports and teacher anedotes. In some cases authors present reasoned discussions of the need for specialized approaches and teacher sensitivity in dealing with non-English-speaking children. In a minority of the literature one can find careful research which deals with clearly stated and cogent problems. Many important questions have been raised but only a few answers are beginning to emerge. Even several of these few must be viewed as tentative pending confirmation by replication.

1. _The research literature_ is indeed growing. During the 1960's and early 1970's there were few well done and well reported studies on either reading process or reading instruction in bilingual education. A number of doctoral dissertations addressed important problems but the majority of published and unpublished articles were either _raisons d'etre_ or exhortations for specialized reading programs.

More recently there has been an increase in the quality of the literature. A growing number of carefully done studies, principally Canadian, have addressed important questions. Since 1975 there have been a number of carefully done and well written review articles which have addressed specific areas of bilingual education including reading. Several publications now regularly survey the literature, abstract articles and commission research summaries and reviews. It is anticipated that the quality of viable research on reading in bilingual education will improve.

It must be noted that research in bilingual education suffers from several severe constraints. One of these is, of course, financial. There seems to have been little funding support for careful research in bilingual education. A second constraint is the socio-political reality of American bilingual education. Viable experimental populations and control groups are difficult to identify. It is difficult to rationalize or implement different treatments for developing children. Extra-mural influences inhibit the careful examination of treatment variables. Validity is jeopardized by socio-economic and learner ex-post facto variables.

Despite the relative growth in both quality and quantity of the research literature, it must be emphasized that the increase is from "scarce" to "sparse"—there is still little done and more to do.

2. Models of reading now in vogue are largely varieties of a psycholinguistic processing approach. Research in the area of bilingual or second language reading tends to confirm the linguistic processing hypothesis.

3. Socio-economic factors confound much of the research and are most often addressed as if they influenced non-English-speaking children in the same manner as they affect English-speakers. Although socio-economic status undoubtedly influences reading achievement, no research was found that questioned the validity of monolingual English remediation techniques for the linguistically different child.

4. Cultural factors that may contribute to or determine differing learning styles are often mentioned in the literature

but seldom with specificity. An exception is a recent article by Vasquez (1979) raising the questioning of cultural determination of learning preferences. More research is needed.

5. Oral proficiency prior to reading instruction is a sine qua non in English. In second language instruction reading has often been used to teach vocabulary intended for subsequent oral use. In bilingual reading much has been made of a hypothosized oral proficiency prerequiste to reading. Research findings are differing enough to state that the oral proficiency prerequisite may not hold for all readers in a bilingual program.

6. Transfer of reading skills from one language to another. Engle observed in 1975 that research on this topic compared reading competency in terms of equal amounts of instruction in both languages. Unanswered is the more important question of the relative efficiency of literacy in L1 then L2 or L2 followed by L1 and the amount of time saved by each approach. She also reported that the specific skills transfered had not been well studied. This review of the literate does indicate that there is indeed a transfer of skills with a concomitant savings in instructional time for second language literacy. Two of the skills demonstrated as transferable are speed and comprehension. In some programs children are reported to be able to read in the second language without any formal instruction.

7. The period in a child's development appropriate for (a) the introduction of a second language and (b) for the introduction of reading. Engle reported a dichotomy on the question of the best time to introduce children to a second language. The literature for over

half a century indicates the ease of second language acquisition in children and that it may be learned differently in early childhood prior to the transition concrete operational thought (C. F. Piaget). This has recently been confirmed for males by Vaid and Lambert (1979). On the other hand, there is good evidence to support the ease of limited second language acquisition during the stages of late concrete and early formal operational states (ages 9-12) in elementary school foreign language programs. Engle believed that the data suggested that the concrete operational stage (ages 6-8) is the least desirable time to introduce children to a new language system. No evidence noted since indicates otherwise. The successful Immersion Model (q.v.) begins at the kindergarten level (age 5).

Engle found no research on the best time to introduce reading in a second language. No research on this topic has been found subsequently except for the Immersion Model. In American classrooms the practice is generally to emulate the first language pattern (age six to seven) or to delay reading somewhat until a limited oral proficiency (at a still undefined level) is established. There is however, no research support for this procedure.

8. Role of pride in the culture and language in learning to read and in learning a second language. It seems to be well established that the learning of a second language is largely dependent on the desire to become part of a prestige language group or for socio-economic reasons. Although the argument for initial literacy in the native language is that the increased self-image will enhance

learning, this hypothesis has not yet been proven. Posited long-term negative psychological effects on the personality have yet to be found although there is now some evidence that the age of becoming bilingual does effect cognitive processing.

9. What is the best instructional method for learning to read in a second language? There is, as yet, no answer to this question. Best results overall favor the use of standard basal texts generally using techniques appropriate for monolingual English speakers--provided the student is receptive toward middle class values and aspirations.

Instructional method is, of course, related to the language chosen for literacy. In English the standard phonetic (phonic) plus "whole word" approach works provided the student has some oral proficiency. Other approaches specifically designed for other languages work well, i.e. Navajo utilizes a completely phonenic alphabet, Japanese a combination of systems). However, even when a language other than English is chosen the teacher usually uses techniques developed for English.

11. Which language for initial literacy? As recently as 1975 Engle reported that the evidence did not clearly support the theoretically intriguing argument for initial literacy in the child's first language. Only very recently has the Rock Point School study with Navajo children convincingly supported the case for initial home-language literacy.

In conclusion the totality of the research on the teaching of reading in bilingual programs seems to indicate:

A. If acculturation into the dominant linguistic culture at the possible risk of affecting cognitive development is the goal—intensive language arts and reading instruction in the dominant language using standard school techniques seems to be the most effective approach;

B. If functional bilingualism and biliteracy are the goals—and both languages have social and economic prestige— the Immersion Model appears to be the most effective approach. It is also the most politically challenging.

C. If cognitive development is to be undisturbed and the preservation of the first language and ethnic identification are valued, then initial literacy in the home language is the best approach—even when a later transition to dominant language literacy is the second objective.

Finally, it is clear that if the non-English-speaking child is to be well served by the American educational system, considerably more and better research on the teaching of reading needs to be done. This will require a greater commitment on the part of the profession and supporting resources.

X. PRIORITIES FOR FUTURE RESEARCH

There appear to be three major problems with research in reading in bilingual education. First, there has not been nearly enough research reported. This lack is both qualitative and quantitative and can only be assuaged with increased sophistication and interest—money would help. Second, several really practical learner strategies for reading based on the current psycholinguistic processing model of reading have been advanced but not rigorously tested experimentally on bilingual children. Third, the research designs of most reported studies have serious flaws that affect both their internal and external validity, including the sociopolitical factors which inhibit better control and the proper portioning of variance.

In light of the few real "knowns" about reading in bilingual or second language instruction it seems appropriate to push forward on all fronts. Some hypotheses, however, deserve mention as being of special interest. These include both the esorteric and the practical—and always must be accompanied by the caveat that the experimental designs must be both clean and practicable: classroom findings must be generalizable to the real educational world.

Questions for which solid answers would be of immediate and immense help to the curriculum planner and classroom teacher include:

1. A number of classroom techniques for helping children process a first language more efficiently have been advanced for use by teachers (Sherman, 1979). Do these contribute significantly to improved reading skills in the second-language reader?

2. In light of the research that suggests the introduction of a second language and second language literacy either before age five or after age eight—precisely at the time it is most often done—what are the cognigive changes which occur in children becoming bilingual at these ages? How does the poorer performance of six to eight year olds correlate with Piagetian psychology? Would different materials and/or teaching/learning strategies be appropriate for children at different age levels?
3. There needs to be considerable basic and applied research into the ethnography of reading instruction, the influence of culture(s) and linguistic processing and perception on the reading process with, perhaps, serious attention to cultural specialization of both materials and instruction.
4. Better psycholinguistic second language processing might result if more attention were paid to the linguistic aspects of English in the mechanical layout of reading materials—color coding syntactic units, using spacing to teach phrase grouping, scientific care with linguistic usefulness of vocabulary and syntactic complexity. These types of experiments would lend themselves to small scale but important studies at the classroom teacher's level.
5. The reported success of the "Immersion" model calls for its replication and testing in more typical American urban and rural environments.
6. There needs to be replication and testing of the initial literacy in the home language approach in more typical Ameri-

can urban or rural settings. The recent successful research with Navajo is in an isolated environment where the home language is the dominant language of the community.

7. The transfer of skills from first to second language literacy needs to be studied in quantifiable terms—i.e. the economy of staggered instruction needs to be established.
8. No one has as yet studied simultaneous biliteracy.
9. Are different models better suited to different linguistic groups even within equivalent socio-economic settings?
10. Lastly, if both the "Immersion" Model and the "Initial Literacy in L1" model prove to contribute significantly to reading achievement, there needs to be a direct comparison of the two to determine which is the more effective.

Few of these research areas can easily be addressed yet each is potentially a significant contribution both to the profession and, ultimately, to the bilingual learner. Reading is the most significant factor in school success and in turn success usually leads to larger sequences of schooling. Therefore, research and classroom applications of research on reading achievement hold the greatest promise of overall contribution toward the improvement of the education of bilingual children.

END

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